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Anesthetized sheep were exposed to a reverberant wave environment like that produced from firing an antitank weapon from a room. The simulation was accomplished by detonating C4 explosives outside a chamber of 18.2 m^3 volume. The blast wave traveled into the chamber through a 20-cm I.D. tube and was reflected off the back wall and subsequently throughout the chamber. The resulting waveform very closely approximated that generated by a Carl-Gustav antitank weapon fired from a chamber. Part I of the studies indicated that for a series of 1 shot or 3 shots, 2.5 minutes apart, multiple shots have a strong additive effect, decreasing the subthreshold levels. The subthreshold for a single blast was estimated to be above a peak of 48 kPa. The subthreshold for 3 exposures was estimated to be at 44 kPa. This study, called Part II, used 100 shots, 1 minute apart. For this exposure, a subthreshold peak of at least 23 kPa was verified using 19 animals.

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Blast Overpressure Studies
Subtitle: Nonauditory Damage-Risk Assessment for Simulated Weapons Fired 100 Times from an Enclosure

INTRODUCTION

This report describes the results of a continuation of studies undertaken to establish the nonauditory subthreshold for injury in a reverberant wave environment like that produced from firing an antitank weapon from a room. The previous results for 1- and 3-shot sequences were reported under contract DAMD-17-88-C-8141.[1] In this study, a 100-shot sequence was used. Anesthetized sheep were used throughout these studies to determine the extent of the effects from various intensities and repetitions of the simulated weapon blast. The studies were conducted by EG&G MSI at the Blast Overpressure Test Site, Kirtland Air Force Base, NM.

This study was the last in a series of studies conducted at this test site.

Starting in FY89 and progressing through the first half of FY97, the following objectives have been accomplished:

1. The literature relating to the bioeffects of complex blast waves was reviewed and reported.[2]
2. A variable-volume all-steel enclosure was designed and built to study the bioeffects of complex blast waves.
3. A blast wave analysis program was developed to measure and graphically display the blast waves generated during each explosive test.
4. Sheep were exposed at various locations and distances to bare C-4 charge explosions in the 17.3 m^3 configuration of the new enclosure during FY90.[3]
5. Exposures were also conducted in two additional enclosure volumes of 35.3 m^3 and 10.8 m^3 and outdoors in the freefield during FY91.[3]
6. Part I of the "Nonauditory Damage Risk Assessment for Simulated Weapons Fired from an Enclosure"[1] study was completed in 1993. The study established the nonauditory subthreshold limit for one exposure as 48 kPa maximum peak pressure (Pmax) and for three exposures as 44 kPa Pmax. Because of time constraints, the 12-exposure non-auditory subthreshold level was not found. While it is

unlikely that a soldier would fire a recoilless rifle from a bunker 12 times, much less 100 times, this waveform is typical anytime the pressure inside an enclosed space is made to resonate at the frequency close to the resonate frequency of the chest. Similar waveforms can occur anytime blast overpressure intrudes into a confined space of similar dimensions as a bunker. The reverberation in such an enclosure may be the "worst case" or most dangerous type of pressure-time history. Verifying the subthreshold level with a large number of exposures for this generic waveform has provided assurance that the proposed injury models can properly assess any type of reverberant pressure-time history. The lack of data for a large number of exposures was the reason for this portion of the study.

7. The "Nonauditory Damage Risk Assessment for Simulated 155mm Self-Propelled Howitzer Muzzle Blast"[4] study was completed in 1996. The nonauditory subthreshold limit was established for 6, 25, and 100 exposures. These limits were 24 kPa Pmax for 6 exposures, 20 kPa Pmax for 25 exposures, and 20 kPa Pmax for 100 exposures.

8. The "Nonauditory Damage Risk Assessment for Simulated Firing Muzzle Blast from a 120mm M121 Mortar System,"[5] study has been completed. The subthreshold nonauditory injury level for this type of complex waveform was found to be 36 kPa Pmax for 6 exposures and 30 kPa Pmax for 50 exposures.

BACKGROUND

Except for the firing from an enclosure reverberant waveform, all of the other reverberant waveforms have established subthresholds for nonauditory limits for large numbers of exposures (50 and 100). For the waveform caused by firing a rocket launcher from a bunker, the nonauditory subthreshold level was identified for 1 and 3 exposures. Prediction of the subthreshold for 100 exposures from 3 exposures is an extrapolation of 33 times (100 ÷ 3). While such an extrapolation can be made, such a prediction should be verified at least by one datum point. The purpose of this study was to verify the predicted nonauditory subthreshold level for 100 shots. An exposure of 100 shots was selected because the freefield and the self-propelled howitzer (SPH) studies both used an exposure of 100 shots. Thus, direct comparison of the effects can be made.

Identification of the nonauditory subthreshold level to be verified was done by several methods. The several approaches used were as follows:

1. Use of a geometric extrapolation: If 48 kPa Pmax is safe for 1 shot and 43 kPa Pmax is safe for 3 shots, then, the nonauditory threshold level can be dropped by 4 kPa Pmax for each threefold increase in number of exposures. Thus, 9 exposures would have a nonauditory threshold of 39 kPa Pmax, 27 exposures a threshold of 4 kPa Pmax, etc. By this approximation, the 100-exposure threshold would be 31.2 kPa Pmax.

2. Use the freefield experience from the earlier studies that there is approximately a 3-dB decrease of the nonauditory threshold level between 6 exposures and 100 exposures. Using this geometric ratio, there will be approximately a 3-dB difference between 1 and 6 exposures. Thus, there would be a 6-dB difference between 1 exposure and 100 exposures. Using a peak for 1 exposure of 48 kPa Pmax, a 6-dB decrease in level is a 50% decrease or 24 kPa Pmax.

3. Use the experience suggested by the researchers at the Third Military Medical College, China. Zhihuan et al.[6] suggest safe limits for weak blast waves to be predicted by $Ps = 37 - 3 \ln (Tc\ N/4)$ $(Tc\ N < 1000)$; $Ps = 20.4$ if $TcN > 1000$. Where Ps is the

overpressure in kPa, Tc is the duration in milliseconds, N is the number of exposures, and ln is the natural logarithm. Using only the natural logarithm to convert from 3 exposures of 44 kPa to 100 exposures, the predicted safe level would be ~33.5 (44-3 ln 33.3) kPa. If the formula is used in its entirety, the safe level would be 20.4 kPa because Tc·N >1000.

From the above analysis, the actual subthreshold or safe level for the firing from an enclosure waveform could vary from 20.4 to 33.9 kPa Pmax. We favored the higher levels and therefore we attempted to expose 20 animals to a design goal of 30 kPa Pmax with the assumption that there would be no injury. If after six to eight animals this assumption appeared to be wrong, the remaining animals would have been exposed to 20 kPa. However, using the 104 gm of explosive, expected to produce 30 kPa, the actual overpressure of the average of the four positions of the instrumentation cylinder was estimated to be 23 kPa. It was at 23 kPa that the tests were conducted. Only 2 animals were used as controls because more than 32 animals had been used as controls over the last 2 years in previous studies.

The 100 exposures were at 1-minute intervals. This was different from the 2.5-minute separation time between each exposure for the 3-exposure tests. In the earlier studies, conducted to

simulate firing from an enclosure, there was a trend, although not statistically significant, for a more severe injury if the 3-exposures were 2.5 minutes apart than if they were 15 minutes apart. Therefore, the 1-minute interval between exposures was assumed to be a more severe test. This 1-minute interval also was the same as what was used for the other reverberant tests. As a practical matter, it also reduced the total test time to approximately 110 minutes (including 3-minute breaks at 25, 50, and 75 exposures) to maintain the proper level of anesthesia of the test animals.

EXPERIMENTAL DESIGN

The all-steel-enclosure used was the same that was used for the previous study simulating firing from a bunker under Task Order 4 of Contract No. DAMD17-88-C-8141. The volume used was 17.3 m^3. A hole in the wall directly opposite the door allows the introduction of a 152-cm segment of a 249-cm long gun barrel constructed from a piece of seamless high-pressure steel tube. The tube had an inside diameter of 20.32 cm and a 2.54-cm thick wall. The tube was horizontally mounted with its centerline 122 cm from the floor and supported inside the chamber by a 2.54-cm thick stand that consists of a 46- x 33-cm base plate, a vertical member that decreases in

width from 30 to 19 cm, and a barrel mount. The mount consisted of a 30- x 16- x 2.54-cm support plate and a 15-cm wide by a 1.27-cm thick band that surrounds the tube. External support for the barrel was furnished by the barrier wall constructed from a 244- x 244-cm sheet of 2.54-cm thick steel and a 10-49 I-beam (10-inch, wide flange I-beam weighing 49 lb/ft^3). The barrel extended 3 cm beyond the barrier wall and was surrounded by a receiver constructed from a 30-cm length of 2.54-cm wall high-pressure tubing. The receiver, slightly tapered from 42 to 41 cm ID, was surrounded by two radial and eight longitudinal gussets fabricated from a 2.54-cm plate to increase its hoop strength. A movable 152- x 122-cm driver section, fabricated from two 15-cm thick plates of salvaged battleship armor, was 15 cm downstream from the leading edge of the receiver. There was a 20-cm diameter hole in the slab of armor adjacent to the receiver that was in line with the centerline of the gun barrel.

The simulator was operated by detonating a spherical charge of C-4 explosive in the mouth of the opening in the driver section that approximated the back blast from a weapon firing. The blast wave traveled down the barrel and was reflected off the walls of the chamber. The wave shape could be varied by firing various lengths of primacord in the barrel along with the C-4 in the driver

section either simultaneously or on a time delay. The wave intensity could be changed by changing the charge weight. The simulator was operated with the enclosure inertia vents open to minimize a quasi-static pressure rise and to eliminate explosive decomposition products.

The pressure-time environment was recorded at various locations in the chamber to establish the exposure positions for the test subjects. Most of the measurements were taken around the barrel of the simulator at a height of 1.2 m off the floor using the free air gauges and the instrumentation cylinder used in the FY93 and FY94 experiments. The pressure-time patterns selected by the Walter Reed Army Institute of Research (WRAIR) and the U.S. Army Aeromedical Research Laboratory (USAARL) to simulate an antitank weapon blast wave were recorded by the instrumentation cylinder located in the simulator in the position shown in Figure 2. The recordings from gauge one of the cylinder are illustrated in Figures 3 through 6. They are wave forms from 454-, 907-, 1361- and 1814-g C-4 charge detonations, respectively. Taking into account the differences in scaling, these records compare quite favorably to the pressure-time recorded at the operator's position during a Carl Gustav antitank weapon firing which is shown in

Figure 7. More important, the wave shapes remained reasonably constant as blast intensity increased.

METHOD

The same approach was used for all experiments. As seen in Figure 8, two anesthetized sheep at a time were fitted with cotton-webbing harnesses and suspended from the ceiling of the enclosure at a height of 1.2 m from the floor as measured to their xiphisternum for exposure. The animals were positioned at mirror image locations facing each other on either side of the simulator barrel. Except gauge no. 7, which was replaced by a sheep, the free field and wall gauges were in the same locations as before. They served to monitor the variation in the pressure-time field on a shot-to-shot basis. Gauge no. 7 was placed in the wall of the gun barrel approximately 5 cm from its end to provide input data to a blast wave prediction model. The wall gauges provided input for the model.

Using the calibration curve established in the earlier study (see figure 9) the amount of C-4 estimated to produce a mean peak pressure of 30 kPa for gauges 1, 2, 3, and 4 of the instrumentation cylinder was 104 gm. As the experiment progressed, the pressure produced was slightly lower than predicted. However, to expose a

sufficient number of animals at a subthreshold level, the experiment was continued at this level.

After the exposure of eight animals, the results indicated that the pressure produced by 104 gm of C-4 explosive was probably not sufficient to produce an injury. Thus, this level was considered to be a subthreshold level and the remaining animals were exposed at this level.

Because of time constraints, the instrumentaiton cylinder was not used to calibrate the 104-gm exposures. This is somewhat unfortunate as the four-gauge average of the instrumentation cylinder needed to be estimated. Part of the problem was that the predictive equation used was not forced to show 0 kPa for 0 gm of explosive. By doing this and making the slope at 203 gm the same, the equation would be:

$$P = .301W - .000416W^2$$

Where W is the weight of C4 in grams.

Using this formula, the peak pressure would have been 26.8 kPa.

The other approach to estimating the low-gauge average of the instrumentation cylinder was to use the east wall reference gauge. The mean peak pressure of the east wall gauge was 18.6 kPa. From the previous studies, the ratio of the average peak pressure of the

four instrumentation cylinder gauges to the peak of the east wall gauge was 1.25. Using this ratio, the estimated level at the instrumentation cylinder was ~23 kPa. While the true answer is likely to be between 23 and 27 kPa, the 23 kPa figure will be used as it is more conservative. While this level was lower than planned, it may have been fortuitous in that no injury was found. Had the level been at 30 kPa and injury found, the approved protocol would have dictated going to 20 kPa for the remaining animals.

High-speed photography of the chest wall of some of the sheep was accomplished with a Fastax camera at a speed of 2000 frames/sec during the earlier study.

EXPERIMENTAL PROCEDURES

Animal Care

Female Columbia-Rambouillet cross sheep having body weights ranging from approximately 32 to 43 kg were used throughout the study. All animals were treated for endoparasites and their ears were sprayed with tick pesticide upon arrival. The drinking water was treated with terramycin powder at a rate of 0.6 g/liter for 2 weeks to help reduce the incidence of pulmonary complications.

The animals were maintained in an open corral with one portion having an overhead cover. At 1 to 2 weeks prior to testing, the

animals were sheared, given a second application of tick spray, and moved to an indoor holding facility. They were kept in groups of from four to six per pen with wood shavings on the floor. Food pellets were provided at a rate of 1 kg/head/day. Water was available *ad libitum*. The sheep were fasted a minimum of 18 hours before a test. The animal facilities were operated in accordance with the Guide for the Care and Use of Laboratory Animals, NIP Publication No. 86-23, revised 1985; the Animal Welfare Act, 9 CFR Part 3, Doc. N.8175, RIN 1579-AA20, published July 16, 1990, Federal Register; and the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, First Edition, March 1988 (Second Edition Draft, December 1996, in the press.)

On the morning of a test, the animals were harnessed, weighed, and given an otoscopic examination to remove any wax or ticks prior to transport to the test site. Both ears were blocked with a selected earplug. Each sheep received a preanesthetic intramuscular (IM) injection of atropine sulfate (0.44 mg/kg) and xylazine (0.22 mg/kg) and was placed in its test position approximately 15 minutes prior to blast exposure. At 5 minutes before the test, each animal was anesthetized with an IM injection of ketamine hydrochloride (11 mg/kg) and then exposed to blast.[7,8] The control

animals were treated the same as the test animals except for blast exposure.

The animals were not allowed to recover from anesthesia and were autopsied starting at 1 hr. following blast exposure.

Pathology Scoring

The animals were not allowed to recover from anesthesia. Starting at approximately 1 hour after the last blast exposure, one sheep at a time was given an IM injection of ketamine hydrochloride (22mg/kg), exsanguinated by severing the jugular veins and carotid arteries, and necropsied. Each animal was assessed for injuries by using an alphanumeric scoring code as reported in reference 9. Any external lesions, fractures, and trauma to the pharynx/larynx, trachea, lungs, heart, hollow abdominal organs and solid abdominal organs were assigned individual numerical scores based on the severity of the lesion. These numerical values were derived from a pathology scoring system initially developed by the WRAIR in collaboration with the Lovelace Biomedical and Environmental Research Institute and is currently used in the Jaycor Pathos data base program. The various lesions were also graded as trace, slight, moderate, or extensive depending upon their severity.

The lungs were graded:

- Negative, for no injury;
- Trace, for scattered surface petechiation or minimal ecchymoses involving less than 10% of the organ;
- Slight, for areas of extensive petechiation to scattered parenchymal hepatization involving ≤10% of the lungs.

The pharynx/larynx and trachea were graded:

- Negative, for no injury;
- Trace, for scattered petechiation to isolated spots of ecchymosis less than one layer deep covering <10% of the organ;
- Slight, for scattered petechiation to confluent contusions one to two layers deep involving <30% of the organ;
- Moderate, for lesions ranging from ecchymotic spots to confluent contusions two layers deep encompassing <60% of the organ;
- Extensive, for areas of confluent contusions two or more layers deep covering 60% or more of the organ,

including reduction in lumen diameter from hematoma formation and edema.

The hollow abdominal organs were scored:

- Negative, for no injury;
- Trace, for minor contusions with intact mucosa and no more than two tissue layers deep or two organs involved with the contusions distributed over an area of <10 cm^2;
- Slight, for scattered contusions one to two layers thick generally distributed over a 1 to 30 cm^2 area with some mucosal ulcerations.
- Moderate, for multiple transmural contusions with mucosal ulcerations encompassing >21 cm^2 of surface area.

Solid intra-abdominal organ injuries were graded:

- Negative, for no injury;
- Trace, for small subcapsular contusions or hematomas involving <10% of one or two organs.

The individual scoring ranges for the severity of injury for the most commonly injured nonauditory organs were as follows:

Severity	Lung	Phx/Lyx	Trachea	GI Tract	Intra-abdominal
Negative	0	0	0	0	0
Trace	3-4	3-4	3-4	3-4	3-4
Slight	5-21	5-16	5-18	5-18	5-18
Moderate	22-26	17-22	19-28	19-28	19-28
Extensive	37-64	23-60	29-55	29-48	29-44

Each individual score was divided by its preassigned maximum possible score to arrive at a severity of injury ratio for that organ or system. The presence or absence, and the extent of a pneumothorax, hemothorax, hemoperitoneum, or coronary and/or cerebral air embolism were summed and added to the sum of the ratios. The resulting value was then multiplied by 1 or 2, depending upon whether the subject was a survivor or fatality, to arrive at an Adjusted Severity of Injury Index (ASII) by excluding ear damage values from the sum of the ratios. The ASII can be expressed by the following equation:

ASII = (ΣRatios + ΣMorbidity Factors)*(Morbidity Multiplier).

It is a useful blast effects analysis tool in that it can be used to evaluate blast injuries in terms of trauma to the whole animal as well as to individual organs.

Veterinary Medical Support

An attending veterinarian with large animal care experience was under contract to provide medical care on a routine and emergency basis. The attending veterinarian was also responsible for accepting or rejecting all animal shipments.

Instrumentation

Piezotronics (PCB) Model 102M152 or Model 102M165 piezoelectric pressure transducers as well as the instrumentation cylinder provided by WRAIR were used during the study. The instrumentation cylinder was fitted with four ablative coated PCB Model 102M125 gauges at 90-degree intervals around its circumference and at the midpoint of its long axis. The 102M152's and 102M165's were used as free air gauges mounted vertically with their sensing elements pointing face up or mounted face-on in three of the enclosure walls. A 1- to 2-mm-thick layer of temperature resistant, high-vacuum grease impregnated with charcoal were coated on the sensing element of each of the free air gauges before each shot to mitigate any thermal or flash effects. Signals from the transducers were passed out of the PCB inline voltage mode followers into the power conditioners through Tektronix Model AM502 differential amplifiers unfiltered. Unfiltered signals were simultaneously recorded on an

Ampex Model PR2230 dc to 80 kHz FM tape recorder and digitized at a 4-msec sample interval with a Pacific Instruments data acquisition system operating in conjunction with a personal computer. The analog tape was kept for archival purposes.

Data Analysis

Biological endpoints used in the data analyses included upper respiratory tract injury, lung trauma, and gastrointestinal tract lesions. The frequency and severity of these lesions were correlated with specific parameters of the complex blast wave that were found to be important in the previous studies. Analysis of data were coordinated between WRAIR and EG&G throughout the study. The number of sheep used in this study verified that the predicted nonauditory subthreshold response level should not show with a 95% confidence level even a trace of injury more than 85% of the time for 100 shots for this complex waveform. These data will be used to validate a computer model that is being developed to predict an injury level as a function of a complex wave environment. Upon validation of the model, the number of sheep required to do these types of studies should be dramatically decreased.

RESULTS

A total of 21 sheep were used, 19 experimental and 2 controls. One sheep, no. 833, died from iatrogenic causes while being positioned in the enclosure prior to exposure and could not be used.

The results are summarized in Table 1. No blast related lesions were seen in any of the experimental animals. The incidental lesions noted in six animals were consistent with those seen in previous studies in both experimental and control animals and were not scored. Thus, the ASII score for both the 19 experimental animals and the two controls was 0.00. This is below the control level of 0.01 established for previous studies.[5]

The 10-ft length of the bunker used in the simulation caused a reverberation mode in the chamber near 60 Hz. Figure 10 shows this resonance as 66 Hz. Figure 11 shows the spectrum of a typical wave. Note that the domination of the energy is 62.5 Hz 1/3-octave band. High-speed photography of the chest wall of the sheep was accomplished in 1993.[1] The chest wall was shown to vibrate at 58-60 Hz. Thus, the simulation should result in an enhanced chest motion from the decaying portion of the waveform.

The measured pressures in the chamber are shown in Appendix A. As noted earlier in the methods section, the estimated peak

pressures from the average of the four gauges of the instrumentation cylinder is at least 23 kPa.

CONCLUSIONS

This study verified that a peak pressure of 23 kPa was a subthreshold level for 100 exposures to a waveform typical of the waveform that is expected to occur when an antitank rocket is launched out of an enclosed space. This is because the shape of the bunker used for the experiment caused a resonance in the same frequency range (50 Hz to 60 Hz) as the resonance of humans.[10] We believe this simulation was a worst-case simulation. Other configurations of the bunker should be less hazardous providing the maximum peak pressure can be kept at 23 kPa or below.

This result, along with the results of the previous reverberant studies,[1,3,4] confirm that a peak of 20 kPa should be a subthreshold level for any impulsive waveform that we can imagine. The 20 kPa peak is set by the 155-mm self-propelled howitzer simulation as that waveform, given the same peak level, is more hazardous than the waveform produced by firing a rocket launcher from an enclosure.

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Table 1. Gross Pathology Results for 100 Shots Fired at 1-Minute Intervals of the Firing From a Bunker Simulation.

Date	Pmax, kPa	Config.	Animal Number	Charge wt., g	LW/BW, %	Lungs	64*	Pharynx/ Larynx	60*	Trachea	55*	GI Tract	48*	Solid Abd. Organs	44*	ASII 21**	Note	Urogenital Tract	
100 Exposure Series																			
7/23/97	30	RSO	815	104	0.91	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
7/23/97		LSO	816		1.26	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00	(a)	Negative	
7/29/97		RSO	817		0.95	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
7/29/97		LSO	818		0.94	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
7/31/97		RSO	819		1.23	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
7/31/97		LSO	820		1.09	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
8/6/97		RSO	821		1.30	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
8/6/97		LSO	822		1.00	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
8/26/97		RSO	825		0.98	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00	(b)	Negative	
8/26/97		LSO	826		1.20	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
8/28/97		RSO	827		1.23	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00	(c)	Negative	
8/28/97		LSO	828		1.29	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00	(c)	Negative	
9/2/97		RSO	829		1.06	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
9/2/97		LSO	830		1.09	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
9/4/97		RSO	831		0.95	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00	(d)	Negative	
9/4/97		LSO	832		1.24	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
9/9/97		LSO	834		1.01	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
9/11/97		RSO	835		0.98	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00	(e)	Bladder	Pet.
9/11/97		LSO	836		1.20	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
8/12/97	Control	RSO	823	0	1.08	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	
8/12/97	Control	LSO	824		1.27	Negative	0	Negative	0	Negative	0	Negative	0	Negative	0	0.00		Negative	

* Maximum possible score

(a) Scattered mucosal congestion between fecal pellets in terminalis and Hemonchus contortus petechiation in abomasum. Not blast related.

(b) Scattered mucosal congestion between fecal pellets in terminalis and portions of rt. cardiac and rt. and left diaphragmatic lobes adherent to thorax.

(c) Retractive atelectasis both diaphragmatic lobes.

(d) Light scattered pleuritis both diaphragmatic lobes.

(e) Scattered enteritis small intestine and scattered petechiation mucosa of urinary bladder, neither of which are blast related.

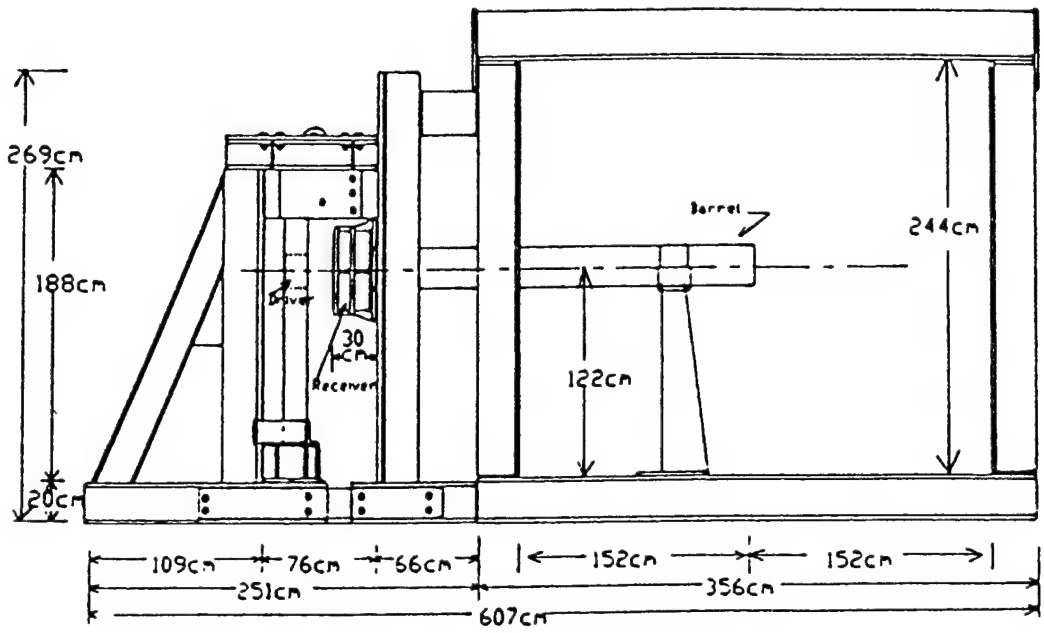

Figure 1.Side View of Weapon Blast Simulator

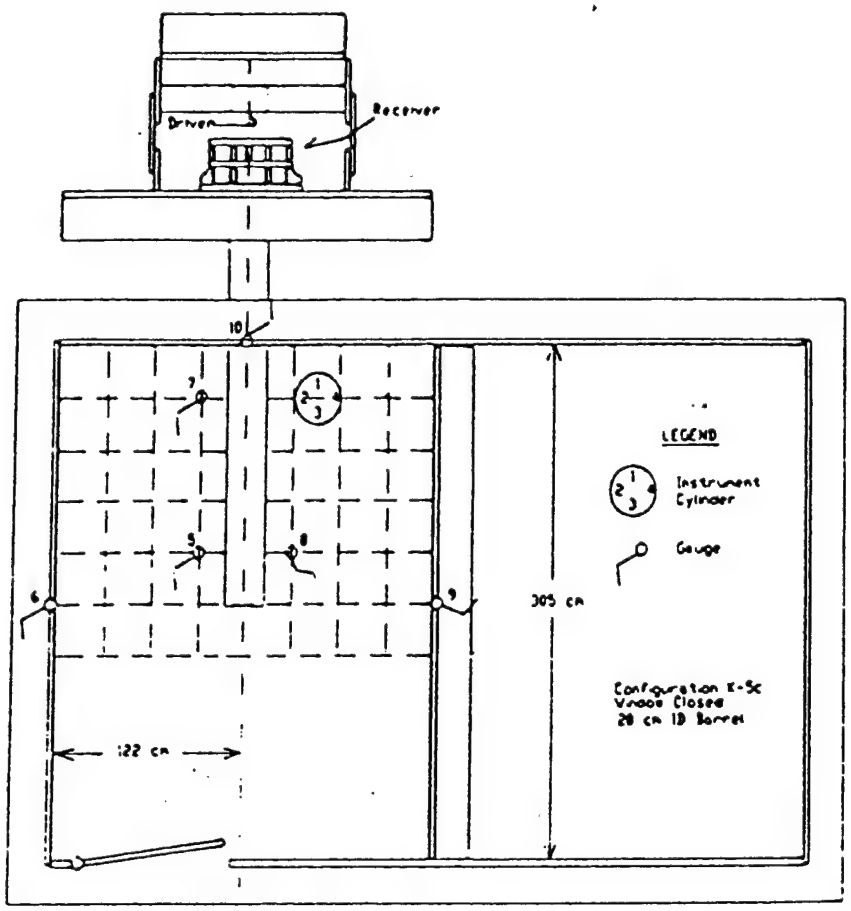

Figure 2. Gauge Layout for Injury Prediction Curve Shots

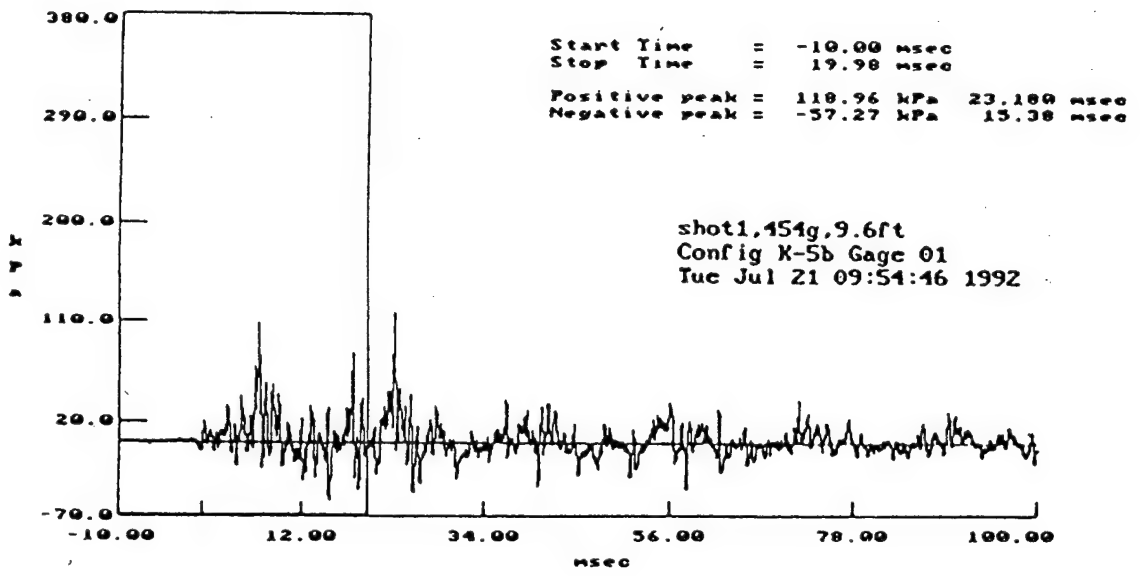

Figure 3. Gauge 1 - Pressure-Time Pattern for a 454-g Charge Detonation

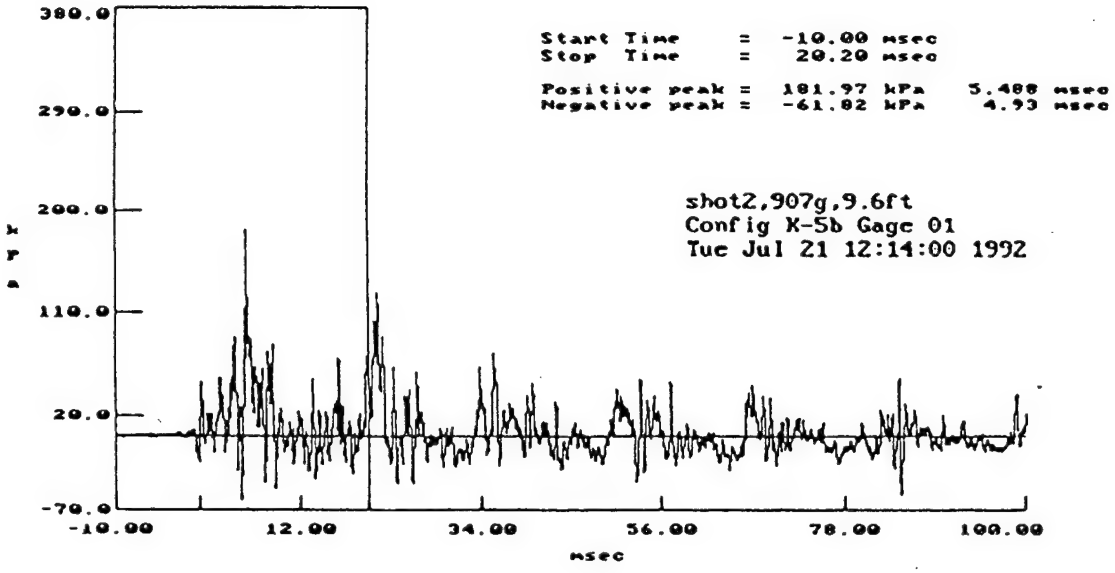

Figure 4. Gauge 1 - Pressure-Time Pattern for a 907-g Charge Detonation

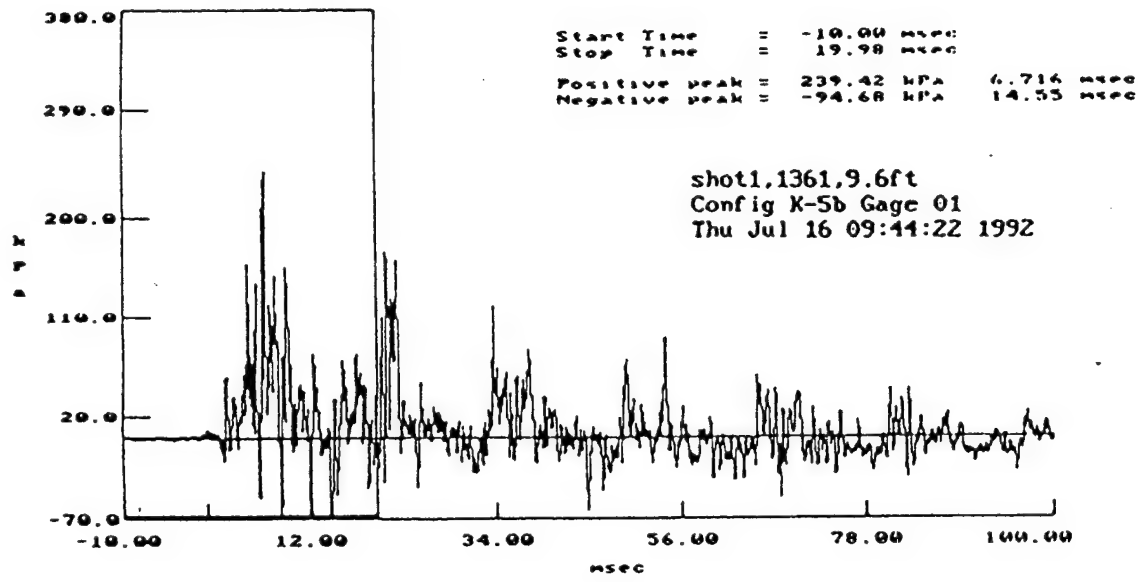

Figure 5. Gauge 1 - Pressure-Time Pattern for a 1361-g Charge Detonation

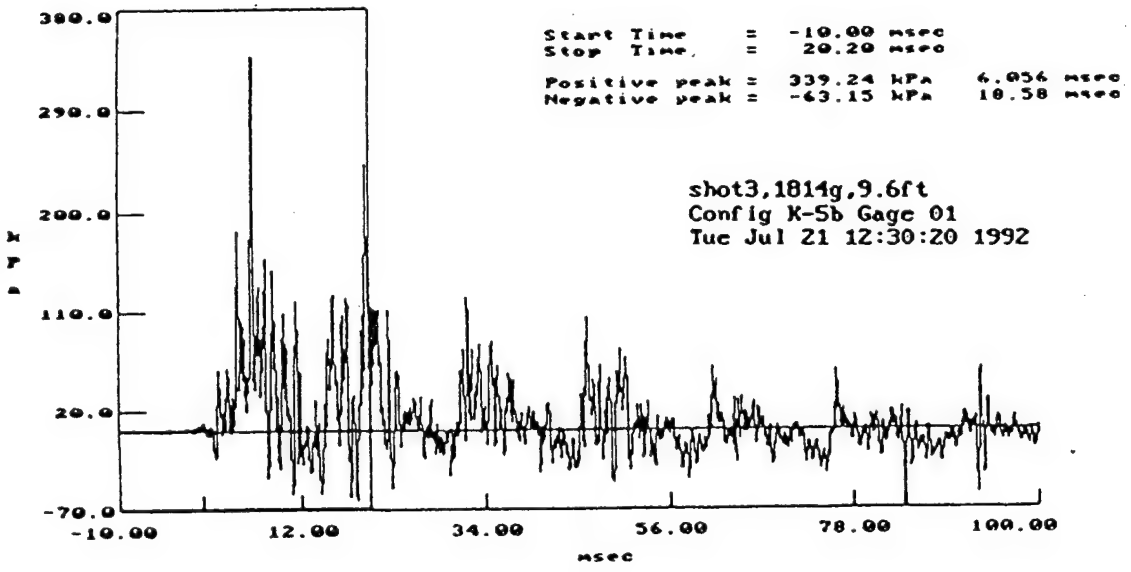

Figure 6. Gauge 1 - Pressure-Time Pattern for a 1814-g Charge Detonation

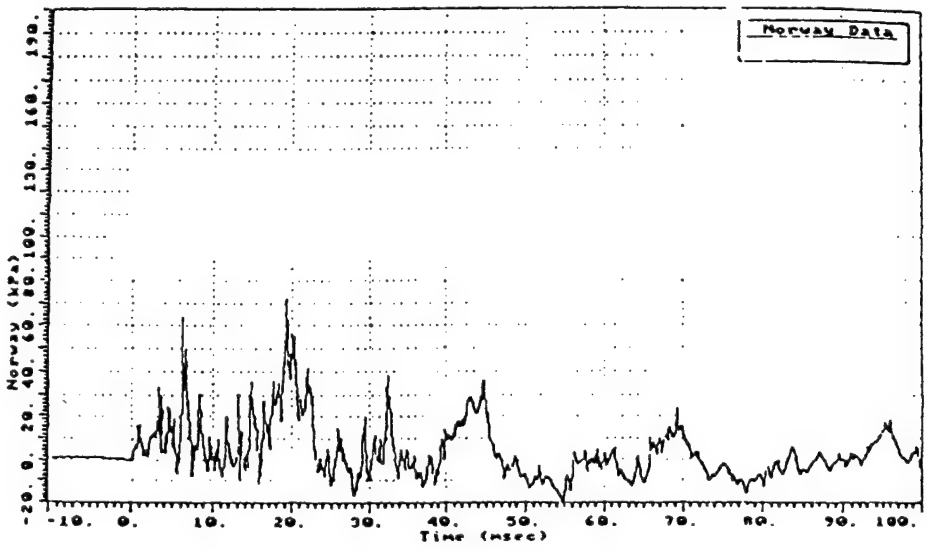

Figure 7. Pressure-Time Waveform Recorded at Operator's Position of Carl Gustav Antitank Weapon

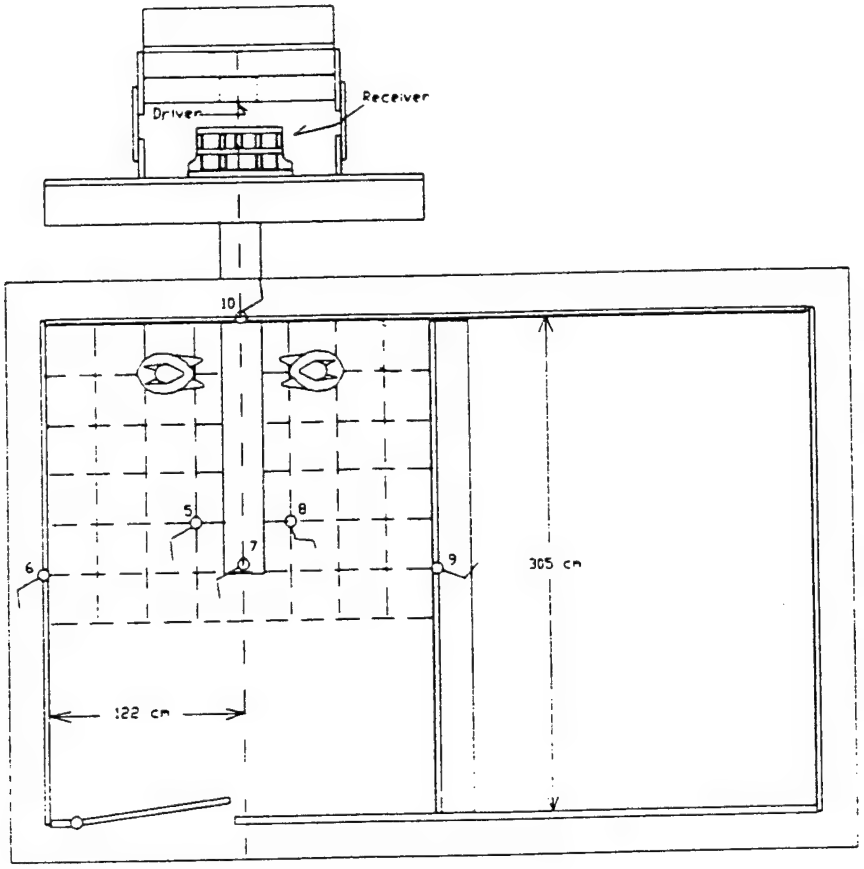

Figure 8. Gauge Layout for Animal Tests

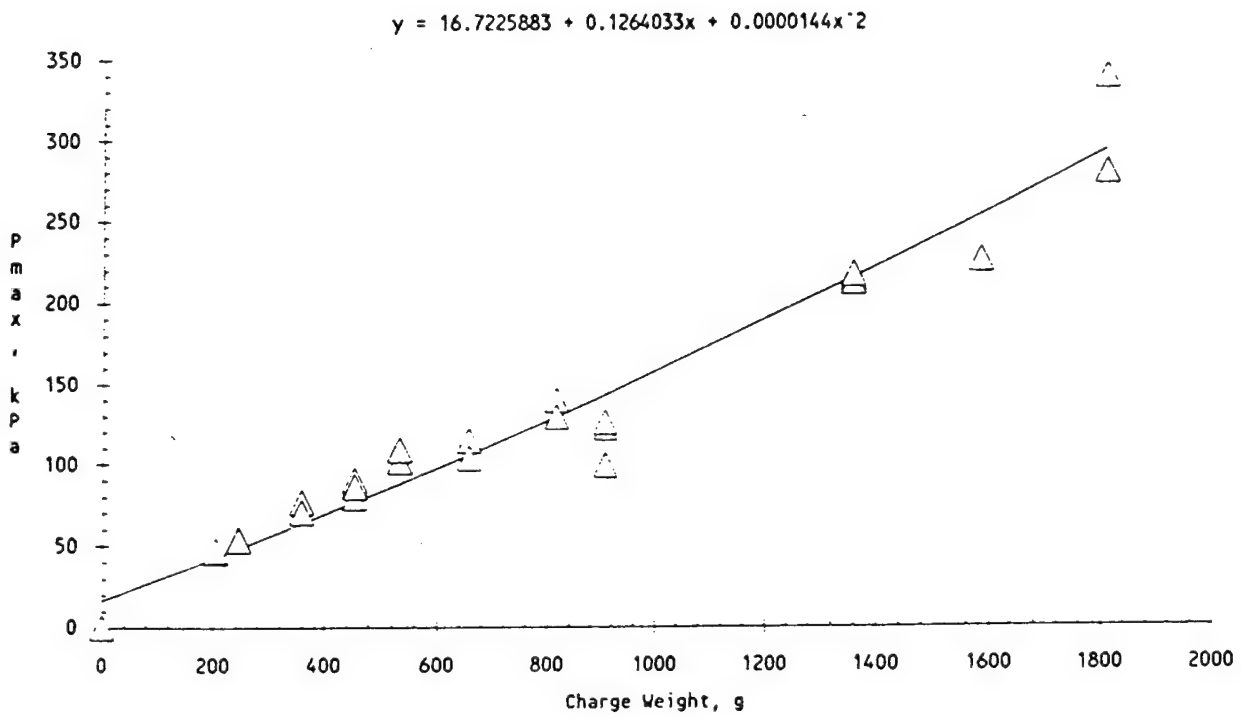

Figure 9. Mean Maximum Peak Pressure (Pmax) vs. Charge Weight Calibration Curve for Gauges 1, 2, 3, and 4 of the Instrument Cylinder

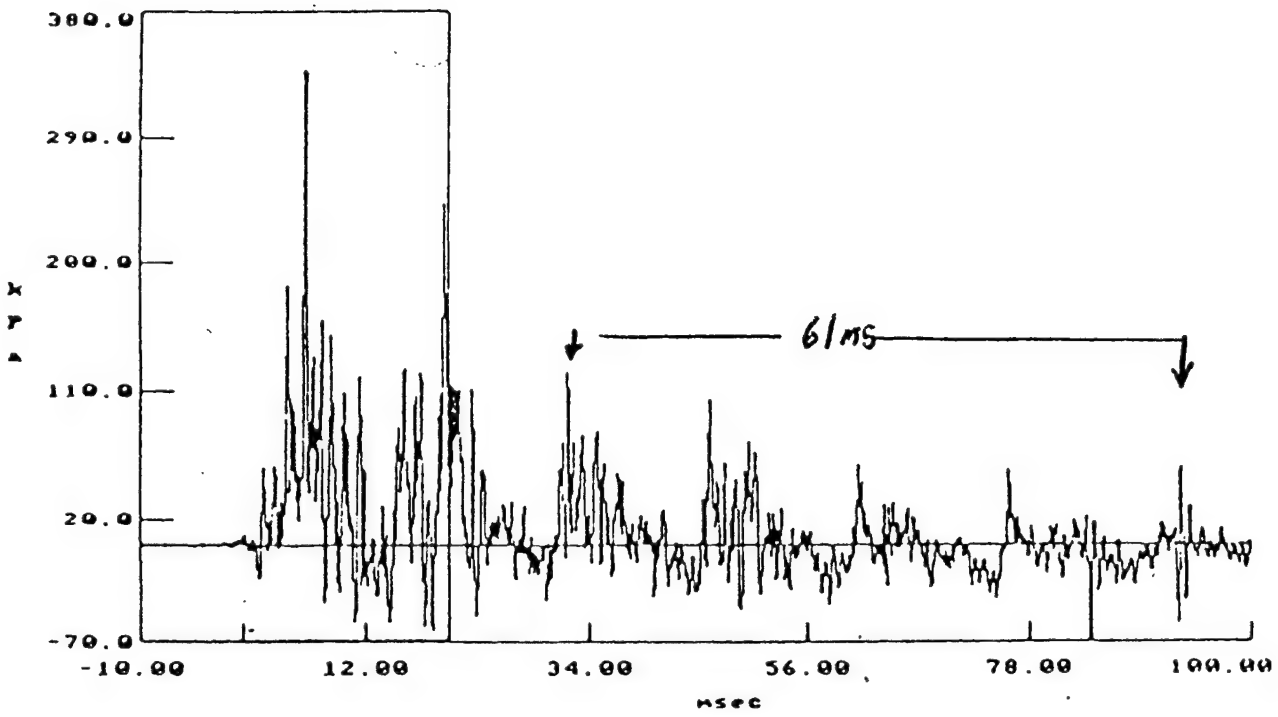

Figure 10. Gauge 1 - Pressure-time pattern for a 1814-g Charge Detonation Showing a 66 Hz Resonance (4 cycles in 61 ms = 66 mz)

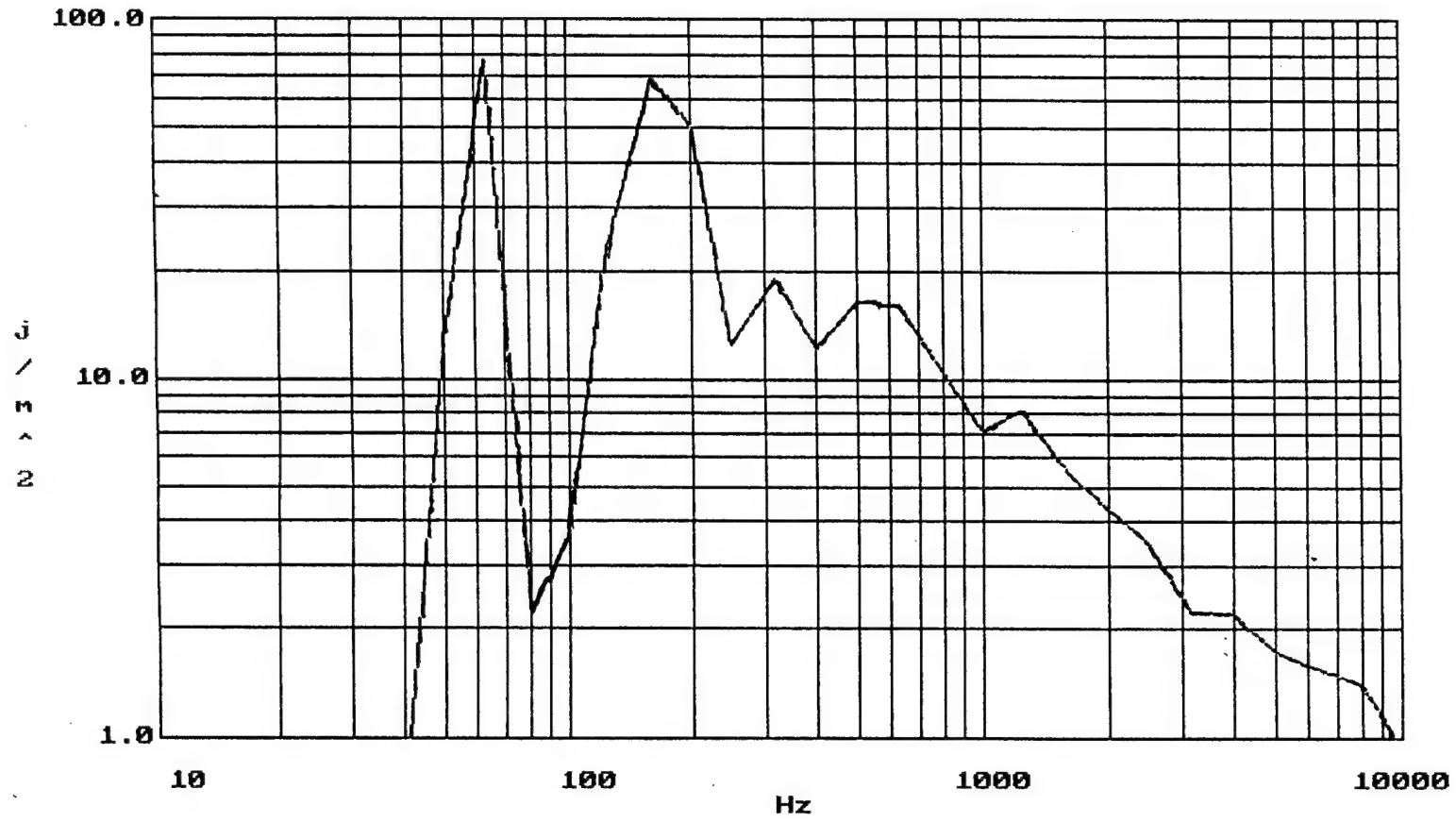

Figure 11. Summation of the 1/3-Octave Band Energies from the East Wall Gauge. Charge weight was 245 gm.

Appendix A

Pressure-Time Measurements

Table A-1. Summary east wall pressure-time values

Test	Charge Weight,g	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
1	104	18.5	4.1	2.1	214.6	322.1	14.8	6.8
2*								
3*								
4		18.5	3.5	2.2	217.9	320.7	15.5	6.5
5		18.4	3.8	1.8	254.6	379.5	12.6	6.6
6		18.3	3.9	1.7	255.2	371.8	13.0	6.6
7		18.1	4.0	1.9	260.8	367.8	13.4	6.3
8		18.6	4.2	1.8	252.1	358.2	12.8	6.4
9		19.6	4.3	1.5	261.4	398.8	11.3	6.8
10		19.1	4.3	1.5	250.2	351.9	11.7	6.9
Mean		18.6	4.0	1.8	245.9	358.9	13.1	6.6
S.D.		0.5	0.3	0.3	18.7	27.1	1.4	0.2

'* East wall gauge malfunctioning during tests 2 and 3.

Table A-2. Test 1. North wall pressure-time values for sheep nos. 815 and 816 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	57	104g	North Wall	41.3	32.1	1.1	103.5	179.6	14.0	4.3
	58	104g	North Wall	40.5	27.1	0.9	114.1	166.9	7.2	4.0
	59	104g	North Wall	44.0	26.2	0.7	85.7	162.0	8.1	3.6
	60	104g	North Wall	33.4	23.9	0.9	117.3	162.1	7.3	3.2
	61	104g	North Wall	40.9	27.3	0.9	116.8	180.2	8.1	3.8
	62	104g	North Wall	35.1	25.4	0.6	83.8	153.0	6.8	3.7
	63	104g	North Wall	43.2	27.7	0.9	103.5	180.2	7.7	3.8
	64	104g	North Wall	26.4	23.3	1.2	153.1	255.9	10.3	3.1
	65	104g	North Wall	44.7	26.8	0.8	83.2	162.0	8.0	4.1
	66	104g	North Wall	41.7	27.1	0.8	103.6	161.9	7.8	3.7
	67	104g	North Wall	42.5	28.2	0.9	101.1	161.8	7.1	3.9
	68	104g	North Wall	44.6	28.0	0.9	103.5	161.9	8.1	3.8
	69	104g	North Wall	43.7	26.5	0.8	83.6	161.8	8.3	3.8
	70	104g	North Wall	27.4	25.1	0.7	122.4	199.6	6.3	3.4
	71	104g	North Wall	35.2	27.4	0.9	110.8	181.0	7.6	3.8
	72	104g	North Wall	33.6	25.4	0.9	117.2	193.3	7.0	3.8
	73	104g	North Wall	30.3	25.3	0.8	137.3	186.7	7.1	3.6
	74	104g	North Wall	33.1	24.2	0.8	117.4	162.3	7.2	3.3
	75	104g	North Wall	37.9	10.1	0.8	112.0	166.4	8.1	4.0
	76	104g	North Wall	36.6	27.0	0.9	116.9	161.9	7.3	3.5
	77	104g	North Wall	38.0	25.9	0.7	108.8	182.4	7.3	3.7
	78	104g	North Wall	33.8	25.8	0.8	110.8	161.8	7.3	3.7
	79	104g	North Wall	32.7	24.3	0.8	107.6	182.1	6.9	3.5
	80	104g	North Wall	38.8	26.9	0.8	109.0	161.8	7.6	3.5
	81	104g	North Wall	46.3	27.6	0.8	83.5	161.6	7.6	3.9
	82	104g	North Wall	49.2	26.8	0.7	51.6	117.1	7.8	3.9
	83	104g	North Wall	43.5	26.6	0.9	101.1	161.7	7.8	3.9
	84	104g	North Wall	41.4	26.4	0.8	83.7	155.0	7.4	4.1
	85	104g	North Wall	29.1	25.1	0.7	117.1	185.5	6.5	3.5
	86	104g	North Wall	38.6	28.0	0.9	103.4	161.7	7.6	3.8
	87	104g	North Wall	43.5	26.2	0.9	105.5	161.7	7.5	3.6
	88	104g	North Wall	42.0	27.2	0.8	87.5	161.7	7.7	3.8
	89	104g	North Wall	42.2	28.7	0.9	103.3	161.6	7.9	3.8
	90	104g	North Wall	31.8	24.8	1.1	136.2	205.0	11.3	3.4
	91	104g	North Wall	34.4	26.4	0.8	116.9	180.1	6.9	3.6
	92	104g	North Wall	42.8	27.3	0.8	105.4	179.5	7.3	3.8
	93	104g	North Wall	33.1	26.4	0.8	91.8	166.2	6.8	3.4
	94	104g	North Wall	31.6	11.4	1.0	140.7	185.5	6.8	3.3
	95	104g	North Wall	46.5	25.4	0.8	83.5	117.1	8.3	4.0
	96	104g	North Wall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	97	104g	North Wall	38.8	9.4	0.9	108.6	182.9	8.1	3.9
	98	104g	North Wall							
	99	104g	North Wall							
	100	104g	North Wall							
Mean				38.5	25.0	0.8	103.8	170.0	7.6	3.7
SD				6.6	5.9	0.1	19.5	24.7	1.2	0.5

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-2. Test 1. North wall pressure-time values for sheep nos. 815 and 816

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
7/23/97	1	104g	North Wall	43.2	26.1	0.8	106.4	143.8	7.4	3.8
	2	104g	North Wall	38.0	27.7	0.7	107.9	171.7	7.7	3.8
	3	104g	North Wall	35.0	26.2	0.8	113.3	188.1	7.2	3.5
	4	104g	North Wall	34.8	6.3	0.8	115.1	185.2	7.5	3.8
	5	104g	North Wall	30.2	23.2	0.7	110.9	182.0	6.5	3.3
	6	104g	North Wall	38.0	27.6	0.7	77.2	182.8	7.4	3.6
	7	104g	North Wall	38.9	29.3	0.9	109.2	162.4	7.4	3.9
	8	104g	North Wall	44.0	26.9	0.8	106.1	162.3	7.7	4.0
	9	104g	North Wall	38.8	26.4	0.8	103.7	162.4	7.7	3.9
	10	104g	North Wall							
	11	104g	North Wall							
	12	104g	North Wall	41.7	27.0	0.9	103.7	180.7	8.5	4.1
	13	104g	North Wall	35.1	28.5	0.9	117.2	182.4	7.1	3.9
	13	104g	South Wall	31.4	27.2	0.8	109.6	189.4	6.9	4.1
	14	104g	North Wall	35.2	27.5	1.0	117.1	162.1	7.8	4.1
	15	104g	North Wall	45.7	29.7	1.0	101.2	162.1	8.3	4.0
	16	104g	North Wall	45.1	26.9	0.9	78.2	162.1	8.2	3.9
	17	104g	North Wall	43.7	25.5	0.9	103.6	162.1	7.2	3.8
	18	104g	North Wall	40.8	29.3	0.8	106.0	162.0	8.4	4.2
	19	104g	North Wall	42.0	26.2	0.9	116.0	185.6	7.8	3.9
	20	104g	North Wall	39.3	27.0	0.8	103.8	167.3	7.3	3.8
	21	104g	North Wall	43.7	28.1	0.8	83.8	155.2	8.1	4.1
	22	104g	North Wall	46.5	27.8	0.8	83.2	179.8	8.6	4.3
	23	104g	North Wall	33.9	7.6	0.9	114.5	186.2	7.3	3.8
	24	104g	North Wall							
	25	104g	North Wall	38.3	28.8	1.0	103.7	195.0	8.1	4.2
	26	104g	North Wall	39.8	28.2	0.9	109.4	181.2	7.9	3.7
	27	104g	North Wall	42.4	27.1	0.9	93.0	185.3	7.7	3.8
	28	104g	North Wall	33.0	6.1	0.7	87.5	185.8	7.4	4.0
	29	104g	North Wall	35.2	25.1	0.7	114.6	186.3	7.3	3.7
	30	104g	North Wall	41.3	27.7	0.9	85.0	162.2	8.1	3.9
	31	104g	North Wall	38.2	11.9	0.8	110.1	186.5	7.1	3.7
	32	104g	North Wall	31.8	25.7	0.8	111.0	182.4	7.5	3.7
	33	104g	North Wall	38.3	25.8	0.8	109.4	162.2	6.7	3.8
	34	104g	North Wall	30.7	26.4	0.7	136.4	182.9	6.9	3.5
	35	104g	North Wall	33.9	26.7	0.9	111.2	182.4	7.1	3.6
	36	104g	North Wall	39.9	6.8	0.8	112.8	165.6	7.5	3.7
	37	104g	North Wall	42.1	27.4	0.8	101.4	180.5	7.4	3.9
	38	104g	North Wall	46.3	28.6	0.8	86.5	157.9	7.9	3.9
	39	104g	North Wall	41.3	28.0	0.8	107.5	162.1	7.6	3.8
	40	104g	North Wall	37.0	27.4	0.8	107.7	180.5	7.6	3.9
	41	104g	North Wall	39.2	27.4	0.7	106.1	154.9	7.4	3.9
	42	104g	North Wall	35.3	25.6	0.8	104.9	181.4	7.6	3.6
	43	104g	North Wall	49.1	27.6	0.9	83.8	162.0	8.1	3.9
	44	104g	North Wall							
	45	104g	North Wall	43.6	27.1	0.9	107.6	180.1	8.1	3.9
	46	104g	North Wall	37.8	27.2	0.8	107.6	162.2	8.2	3.8
	47	104g	North Wall	32.9	28.4	0.8	137.5	201.0	8.0	4.0
	48	104g	North Wall	40.5	28.1	0.7	78.0	157.1	7.0	4.0
	49	104g	North Wall	40.7	26.1	0.8	103.5	162.2	7.5	3.7
	50	104g	North Wall	50.5	27.7	0.8	74.5	161.9	8.8	4.0
	51	104g	North Wall	33.1	25.5	0.9	136.3	162.4	6.7	3.2
	52	104g	North Wall	44.5	29.6	1.0	105.9	161.8	8.0	4.1
	53	104g	North Wall	37.0	25.5	0.8	109.3	180.5	7.2	3.5
	54	104g	North Wall	47.7	26.1	1.0	74.4	161.8	7.9	3.9
	55	104g	North Wall	43.1	29.2	0.9	103.4	161.7	8.3	4.4
	56	104g	North Wall	40.0	25.2	0.8	104.7	180.2	7.8	3.7

Table A-3. Test 1. South wall pressure-time values for sheep nos. 815 and 816

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
7/23/97	1	104g	South Wall	27.4	27.4	0.7	102.6	186.2	6.7	3.7
	2	104g	South Wall	28.0	28.0	0.8	138.8	189.8	6.9	3.9
	3	104g	South Wall	25.7	25.7	0.6	123.4	207.6	6.5	3.7
	4	104g	South Wall	26.8	26.8	0.7	138.5	194.0	7.0	3.9
	5	104g	South Wall	23.4	23.4	0.7	122.0	244.5	6.3	3.6
	6	104g	South Wall	26.4	26.4	0.8	136.8	189.8	6.7	3.8
	7	104g	South Wall	29.0	29.0	0.7	95.6	194.0	7.4	3.9
	8	104g	South Wall	31.3	27.1	0.8	102.7	189.7	6.5	3.9
	9	104g	South Wall	29.2	29.2	0.7	102.7	189.7	7.0	3.8
	10	104g	South Wall							
	11	104g	South Wall							
	12	104g	South Wall	26.7	26.7	0.7	98.6	231.2	7.3	4.1
	13	104g	South Wall	31.4	27.2	0.8	109.6	189.4	6.9	4.1
	14	104g	South Wall	31.6	26.8	0.9	117.9	193.5	6.5	4.2
	15	104g	South Wall	37.1	29.0	0.8	83.4	180.1	7.2	4.1
	16	104g	South Wall	26.4	25.8	0.8	136.6	201.4	6.8	3.9
	17	104g	South Wall	27.9	27.9	0.7	136.7	193.2	6.8	3.8
	18	104g	South Wall	29.8	29.8	0.7	136.5	189.5	7.4	4.3
	19	104g	South Wall	29.5	26.6	0.7	110.8	198.5	5.8	4.1
	20	104g	South Wall	25.9	25.7	0.8	138.5	199.0	6.2	4.0
	21	104g	South Wall	30.3	30.3	0.7	94.7	201.9	7.5	4.1
	22	104g	South Wall	30.1	30.1	0.9	136.6	180.0	6.4	4.3
	23	104g	South Wall	26.2	3.9	0.7	143.9	207.8	6.7	3.9
	24	104g	South Wall							
	25	104g	South Wall	29.5	26.5	0.8	109.9	201.3	6.7	4.2
	26	104g	South Wall	26.9	26.9	0.7	137.7	232.0	7.1	4.0
	27	104g	South Wall	28.7	28.3	0.8	109.7	237.2	6.0	4.0
	28	104g	South Wall	26.3	26.3	0.7	137.5	197.2	7.2	4.1
	29	104g	South Wall	25.7	25.7	0.7	142.0	193.0	6.8	3.9
	30	104g	South Wall	26.5	25.6	0.8	137.6	193.7	6.1	4.0
	31	104g	South Wall	26.3	6.5	0.7	143.6	237.4	6.7	3.8
	32	104g	South Wall	26.4	26.4	0.7	138.5	180.4	6.7	3.8
	33	104g	South Wall	27.4	27.4	0.7	138.4	189.3	6.9	3.7
	34	104g	South Wall	26.5	26.5	0.8	136.6	232.2	6.5	3.6
	35	104g	South Wall	28.9	27.4	0.8	137.6	201.7	5.9	3.7
	36	104g	South Wall	28.7	28.7	0.6	97.1	220.8	7.1	4.1
	37	104g	South Wall	25.7	25.0	0.8	136.6	233.4	6.3	3.9
	38	104g	South Wall	27.5	27.0	0.8	137.7	234.9	6.4	4.0
	39	104g	South Wall	30.1	28.7	0.8	109.5	189.3	6.0	3.9
	40	104g	South Wall	28.4	28.4	0.7	119.5	201.6	6.9	4.0
	41	104g	South Wall	27.7	27.7	0.7	138.3	189.2	7.2	4.1
	42	104g	South Wall	27.1	27.1	0.7	138.6	194.1	6.6	3.9
	43	104g	South Wall	29.3	29.3	0.7	109.6	192.7	7.2	4.0
	44	104g	South Wall							
	45	104g	South Wall	28.0	28.0	0.6	110.3	187.5	7.2	3.9
	46	104g	South Wall	27.7	27.7	0.7	95.3	180.1	7.0	4.0
	47	104g	South Wall	26.7	26.7	0.7	109.6	231.0	7.4	4.1
	48	104g	South Wall	25.9	25.6	0.8	136.7	233.5	6.7	3.9
	49	104g	South Wall	25.1	25.1	0.7	138.5	181.6	6.8	3.9
	50	104g	South Wall	29.9	29.9	0.7	102.4	180.0	7.3	4.3
	51	104g	South Wall	23.8	23.8	0.8	108.4	232.2	6.2	3.6
	52	104g	South Wall	32.2	27.4	0.9	109.6	189.1	6.7	4.1
	53	104g	South Wall	24.3	24.3	0.7	133.1	233.8	6.5	3.7
	54	104g	South Wall	27.6	26.5	0.8	136.3	229.8	6.0	4.0
	55	104g	South Wall	30.6	30.6	0.7	94.0	189.2	7.8	4.3
	56	104g	South Wall	25.5	25.5	0.7	120.6	193.6	6.8	3.8
	57	104g	South Wall	28.2	28.1	1.6	179.0	230.6	13.2	4.2

Table A-3. Test 1. South wall pressure-time values for sheep nos. 815 and 816 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	South Wall	30.2	27.1	0.8	114.5	185.1	6.4	4.2
	59	104g	South Wall	25.7	25.7	0.7	99.2	181.3	6.8	3.8
	60	104g	South Wall	24.0	24.0	0.7	138.4	232.0	6.3	3.6
	61	104g	South Wall	29.1	27.7	0.8	138.2	192.4	5.3	3.9
	62	104g	South Wall	24.7	24.7	0.7	129.3	201.0	6.7	3.6
	63	104g	South Wall	29.9	29.9	0.7	96.7	191.4	7.5	4.1
	64	104g	South Wall	25.2	25.2	0.8	143.1	232.1	6.1	3.4
	65	104g	South Wall	27.9	27.9	0.7	137.6	189.1	7.2	4.2
	66	104g	South Wall	28.3	27.2	0.6	95.4	181.5	5.5	3.9
	67	104g	South Wall	27.5	27.5	0.7	113.1	218.7	7.3	4.0
	68	104g	South Wall	30.6	26.8	0.8	102.1	180.0	6.3	4.1
	69	104g	South Wall	29.5	29.5	0.7	93.6	189.0	7.2	4.2
	70	104g	South Wall	24.3	24.3	0.7	137.4	237.2	6.4	3.6
	71	104g	South Wall	29.6	29.6	0.7	109.4	189.0	6.9	4.0
	72	104g	South Wall	26.1	26.1	0.7	138.3	189.1	6.9	3.8
	73	104g	South Wall	26.7	26.7	0.7	137.5	198.9	6.5	3.7
	74	104g	South Wall	24.8	24.8	0.7	138.3	201.3	6.5	3.8
	75	104g	South Wall	27.4	26.3	0.9	114.0	234.3	5.8	4.1
	76	104g	South Wall	25.9	25.9	0.7	137.5	201.7	6.8	3.9
	77	104g	South Wall	31.4	27.6	0.8	109.4	191.3	6.5	3.7
	78	104g	South Wall	27.2	25.8	0.8	109.3	229.8	6.5	3.9
	79	104g	South Wall	24.6	24.6	0.7	138.2	193.6	6.3	3.7
	80	104g	South Wall	27.1	27.1	0.7	137.3	193.2	6.7	3.8
	81	104g	South Wall	28.7	28.2	0.8	137.3	179.8	6.0	4.1
	82	104g	South Wall	28.8	28.8	0.6	95.5	201.6	7.1	3.8
	83	104g	South Wall	26.5	26.5	0.7	138.1	193.3	7.0	4.0
	84	104g	South Wall	29.1	26.8	0.9	136.2	201.1	6.5	3.8
	85	104g	South Wall	24.6	24.6	0.7	138.2	231.9	6.4	3.8
	86	104g	South Wall	28.7	26.3	0.8	137.4	229.6	6.5	4.2
	87	104g	South Wall	25.9	25.9	0.7	138.2	201.6	6.8	3.7
	88	104g	South Wall	25.7	25.0	0.8	109.3	231.7	6.2	3.9
	89	104g	South Wall	28.0	28.0	0.7	110.4	179.7	7.3	4.1
	90	104g	South Wall	27.1	27.1	0.7	117.6	193.4	6.5	3.7
	91	104g	South Wall	27.5	25.0	0.8	136.2	179.9	6.4	3.7
	92	104g	South Wall	27.9	27.0	0.8	136.0	229.4	6.5	3.9
	93	104g	South Wall	24.9	24.9	0.7	138.1	235.9	6.4	3.7
	94	104g	South Wall	24.2	6.9	0.7	142.6	236.0	6.5	3.7
	95	104g	South Wall	28.1	28.1	0.6	109.5	191.5	7.0	3.8
	96	104g	South Wall	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	97	104g	South Wall	25.7	5.5	0.7	140.7	234.4	7.1	4.0
	98	104g	South Wall							
	99	104g	South Wall							
	100	104g	South Wall							
Mean				27.3	25.7	0.7	122.6	201.9	6.7	3.9
SD				3.6	5.3	0.1	22.0	29.0	1.1	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-4. Test 1. East wall pressure-time values for sheep nos. 815 and 816

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
7/23/97	1	104g	East Wall	17.7	4.2	2.3	221.9	249.9	18.4	7.1
	2	104g	East Wall	16.9	4.4	2.4	243.8	350.4	18.1	6.9
	3	104g	East Wall	18.4	3.7	2.1	223.9	352.4	14.5	6.5
	4	104g	East Wall	17.6	5.0	2.8	244.1	351.2	20.2	7.2
	5	104g	East Wall	17.6	2.9	2.1	220.9	350.6	14.2	6.3
	6	104g	East Wall	21.0	3.8	2.6	220.6	294.5	16.6	6.7
	7	104g	East Wall	16.7	3.7	3.3	269.8	350.0	19.8	7.0
	8	104g	East Wall	21.6	4.3	2.4	203.3	309.4	16.5	7.0
	9	104g	East Wall	18.8	4.7	2.6	239.5	309.6	16.4	6.8
	10	104g	East Wall							
	11	104g	East Wall							
	12	104g	East Wall	22.6	3.7	3.4	216.6	309.1	19.9	7.2
	13	104g	East Wall	16.3	3.5	2.1	239.7	349.6	19.1	7.0
	14	104g	East Wall	23.8	4.0	1.0	162.4	247.7	6.2	7.3
	15	104g	East Wall	19.5	4.2	0.8	165.4	245.8	7.0	7.2
	16	104g	East Wall	17.8	4.4	2.5	239.3	349.6	17.3	6.8
	17	104g	East Wall	17.7	3.0	0.7	150.2	283.6	5.6	6.8
	18	104g	East Wall	17.9	3.7	2.4	219.8	349.2	17.5	7.4
	19	104g	East Wall	21.1	3.9	2.5	222.9	310.9	18.5	7.1
	20	104g	East Wall	17.6	4.4	2.5	219.9	351.5	16.9	6.9
	21	104g	East Wall	21.0	3.8	2.5	216.1	309.0	17.9	7.2
	22	104g	East Wall	19.0	3.5	1.2	162.4	310.9	7.3	7.4
	23	104g	East Wall	20.1	6.2	3.1	223.4	304.8	19.5	6.8
	24	104g	East Wall							
	25	104g	East Wall	18.7	3.8	0.9	169.8	294.4	6.2	7.4
	26	104g	East Wall	19.8	3.1	2.7	233.7	324.4	17.7	6.8
	27	104g	East Wall	18.6	3.5	2.6	246.1	310.9	18.1	7.0
	28	104g	East Wall	17.2	4.5	2.6	244.2	349.6	17.8	7.1
	29	104g	East Wall	19.0	3.4	2.3	221.4	349.5	18.4	6.8
	30	104g	East Wall	17.4	3.4	2.2	219.1	349.0	19.2	7.2
	31	104g	East Wall	18.3	9.4	2.2	223.2	351.5	15.8	6.6
	32	104g	East Wall	19.4	4.4	2.5	232.4	340.7	17.2	6.6
	33	104g	East Wall	22.1	4.3	2.3	216.1	293.8	16.8	6.8
	34	104g	East Wall	17.6	4.2	2.7	240.4	349.6	16.0	6.3
	35	104g	East Wall	17.3	4.9	2.5	239.8	361.6	18.6	6.5
	36	104g	East Wall	22.2	5.3	2.5	204.3	294.3	17.8	7.0
	37	104g	East Wall	17.5	3.4	2.5	219.1	349.2	17.5	6.8
	38	104g	East Wall	18.6	5.9	0.9	167.1	283.0	6.8	6.9
	39	104g	East Wall	19.1	2.9	2.3	219.7	324.2	18.3	6.7
	40	104g	East Wall	21.0	3.5	2.4	199.6	309.0	17.6	6.8
	41	104g	East Wall	16.8	4.1	2.6	243.1	352.7	18.9	6.8
	42	104g	East Wall	22.5	3.4	2.3	199.8	309.2	16.8	6.6
	43	104g	East Wall	16.6	3.5	2.6	242.8	349.2	18.5	7.0
	44	104g	East Wall							
	45	104g	East Wall	21.2	3.2	2.3	216.8	311.0	18.5	6.7
	46	104g	East Wall	18.0	3.3	2.5	219.7	349.0	17.0	7.1
	47	104g	East Wall	20.4	3.3	2.6	216.0	348.8	19.1	7.1
	48	104g	East Wall	16.1	4.2	2.4	220.1	361.4	19.0	6.9
	49	104g	East Wall	17.5	4.1	2.0	217.1	308.0	9.7	6.7
	50	104g	East Wall	18.1	2.8	1.4	219.4	308.7	7.0	7.4
	51	104g	East Wall	19.3	3.3	2.1	216.3	302.4	14.8	6.1
	52	104g	East Wall	17.9	3.0	1.0	168.0	293.4	6.6	7.1
	53	104g	East Wall	18.3	3.4	1.5	219.5	308.8	13.9	6.4
	54	104g	East Wall	18.2	3.2	0.9	168.0	308.6	6.4	7.0
	55	104g	East Wall	17.7	3.7	2.5	242.3	348.5	20.0	7.4
	56	104g	East Wall	15.3	3.3	2.3	243.6	349.0	18.0	6.6
	57	104g	East Wall	17.8	3.7	1.2	221.4	324.0	9.2	7.4
	58	104g	East Wall	17.2	3.1	0.9	171.5	314.5	6.6	6.9

Table A-4. Test 1. East wall pressure-time values for sheep nos. 815 and 816 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	59	104g	East Wall	17.6	3.6	0.9	165.3	282.5	5.9	6.6
	60	104g	East Wall	18.7	3.4	2.3	217.0	296.7	15.6	6.1
	61	104g	East Wall	16.7	3.3	2.3	219.4	326.1	18.7	6.8
	62	104g	East Wall	16.7	3.8	2.3	219.4	348.8	16.6	6.5
	63	104g	East Wall	19.1	8.7	2.4	219.4	348.7	18.1	6.8
	64	104g	East Wall	18.0	3.3	2.0	217.1	326.5	14.9	5.8
	65	104g	East Wall	18.8	4.1	0.7	168.1	247.4	4.1	7.2
	66	104g	East Wall	19.4	3.1	0.8	166.1	247.5	5.0	6.6
	67	104g	East Wall	18.5	3.3	2.0	220.9	348.6	9.7	6.7
	68	104g	East Wall	17.0	3.0	2.3	219.6	351.0	17.0	6.6
	69	104g	East Wall	16.5	3.4	2.6	240.8	360.9	17.5	7.1
	70	104g	East Wall	16.9	3.6	2.3	222.9	351.1	15.2	5.9
	71	104g	East Wall	22.0	4.1	2.3	199.3	305.2	18.1	6.7
	72	104g	East Wall	19.6	3.4	2.2	216.7	312.5	16.9	6.7
	73	104g	East Wall	17.0	4.1	2.4	246.1	351.3	17.9	6.4
	74	104g	East Wall	16.0	3.4	1.8	221.1	349.4	13.2	6.1
	75	104g	East Wall	17.0	9.0	2.4	245.1	362.3	18.2	7.0
	76	104g	East Wall	19.2	3.4	2.6	218.8	323.1	17.5	6.6
	77	104g	East Wall	18.5	4.0	2.3	215.9	348.7	17.7	6.6
	78	104g	East Wall	17.5	3.9	1.0	167.9	293.9	5.6	6.7
	79	104g	East Wall	17.5	3.8	2.4	237.0	308.8	16.2	6.2
	80	104g	East Wall	17.3	3.0	0.6	168.0	247.4	3.8	6.5
	81	104g	East Wall	19.6	3.5	2.3	240.7	312.1	18.2	6.9
	82	104g	East Wall	18.7	2.8	2.3	215.8	308.5	17.4	6.7
	83	104g	East Wall	21.0	3.6	2.4	194.8	308.4	18.2	6.8
	84	104g	East Wall	20.4	3.2	1.0	164.4	293.2	6.5	6.8
	85	104g	East Wall	16.4	4.6	2.2	245.0	350.1	17.1	6.3
	86	104g	East Wall	17.7	3.8	2.3	242.4	348.6	17.1	6.6
	87	104g	East Wall	18.1	3.6	2.2	239.5	323.8	16.8	6.7
	88	104g	East Wall	17.7	4.0	2.6	219.3	360.6	17.5	6.7
	89	104g	East Wall	18.9	3.3	1.7	221.3	308.2	15.6	7.2
	90	104g	East Wall	19.2	4.0	2.1	216.7	310.6	15.7	6.3
	91	104g	East Wall	18.6	3.7	1.0	167.6	312.0	6.0	6.7
	92	104g	East Wall	19.2	3.4	0.9	167.6	273.2	5.7	7.1
	93	104g	East Wall	17.7	3.9	1.6	221.6	309.4	13.2	6.2
	94	104g	East Wall	17.5	11.3	2.2	221.9	349.9	15.0	6.5
	95	104g	East Wall	19.1	2.8	2.5	219.2	360.5	17.5	6.9
	96	104g	East Wall							
	97	104g	East Wall	16.6	10.9	2.6	243.0	348.1	17.5	6.9
	98	104g	East Wall							
	99	104g	East Wall							
	100	104g	East Wall							
Mean				18.5	4.1	2.1	214.6	322.1	14.8	6.8
SD				1.7	1.5	0.7	26.5	30.8	4.8	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-5. Test 2 North wall pressure-time values for sheep nos. 817 and 818

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
7/29/97	1	104g	North Wall	31.9	21.6	0.8	112.1	190.6	6.9	3.6
	2	104g	North Wall	25.2	11.7	1.2	156.8	250.5	10.6	3.1
	3	104g	North Wall	31.5	20.3	0.8	88.4	182.9	6.0	3.1
	4	104g	North Wall	30.3	22.4	0.9	107.0	193.2	6.5	3.4
	5	104g	North Wall	28.8	16.6	1.2	84.3	208.7	10.1	3.4
	6	104g	North Wall	36.8	20.0	0.7	78.4	156.6	6.2	2.9
	7	104g	North Wall	33.7	21.0	0.8	107.1	172.3	6.2	3.1
	8	104g	North Wall	33.8	22.1	0.7	107.0	190.3	6.9	3.3
	9	104g	North Wall	39.8	19.9	0.8	84.0	166.8	6.6	2.8
	10	104g	North Wall	37.2	20.5	0.8	83.8	187.0	6.5	2.9
	11	104g	North Wall	30.5	23.4	0.9	111.8	194.4	6.5	3.4
	12	104g	North Wall	35.9	22.6	0.8	88.2	181.5	6.7	3.3
	13	104g	North Wall	33.9	12.9	0.8	113.0	186.3	6.2	3.1
	14	104g	North Wall	32.7	21.9	0.9	111.9	181.2	7.0	3.5
	15	104g	North Wall	28.1	21.5	0.9	150.7	195.6	6.1	3.4
	16	104g	North Wall	29.4	21.4	0.7	106.9	181.2	6.4	3.3
	17	104g	North Wall	28.9	20.2	0.7	112.0	181.0	7.0	3.6
	18	104g	North Wall	34.8	9.3	0.8	82.7	167.7	6.3	3.1
	19	104g	North Wall	29.2	21.6	0.6	111.9	163.4	6.2	3.1
	20	104g	North Wall	43.0	22.8	0.7	60.8	63.4	6.9	3.4
	21	104g	North Wall	30.9	19.8	0.7	79.2	181.5	6.1	3.0
	22	104g	North Wall	36.5	22.3	0.6	78.6	163.3	6.1	3.2
	23	104g	North Wall	29.1	21.4	0.7	111.5	190.6	6.0	2.9
	24	104g	North Wall	28.8	21.5	0.7	111.4	163.3	6.4	3.0
	25	104g	North Wall	31.4	21.4	0.8	103.9	182.7	6.2	3.1
	26	104g	North Wall	29.2	21.2	0.8	108.6	201.6	6.3	3.1
	27	104g	North Wall	31.7	14.4	0.8	81.6	167.4	6.2	3.0
	28	104g	North Wall	32.9	21.6	0.8	88.6	181.3	6.2	3.2
	29	104g	North Wall	31.5	20.2	0.8	111.4	181.8	5.8	2.7
	30	104g	North Wall	26.5	20.1	0.8	86.6	182.7	6.1	2.8
	31	104g	North Wall	27.2	20.1	0.8	118.2	195.1	5.5	2.8
	32	104g	North Wall	24.3	12.7	0.8	123.7	200.5	5.9	2.6
	33	104g	North Wall	24.1	19.2	0.9	155.9	195.1	5.8	2.6
	34	104g	North Wall	28.5	20.2	0.6	78.6	163.4	5.5	3.0
	35	104g	North Wall	24.7	20.1	0.8	118.2	234.0	6.0	2.9
	36	104g	North Wall	23.5	20.0	0.8	118.2	194.9	5.7	3.0
	37	104g	North Wall	30.7	20.8	0.8	107.1	181.7	6.5	3.1
	38	104g	North Wall	27.9	11.7	0.9	122.5	195.7	6.7	3.2
	39	104g	North Wall	36.0	21.3	0.7	88.5	181.6	6.7	3.4
	40	104g	North Wall	30.5	20.8	0.9	103.9	163.3	6.6	2.9
	41	104g	North Wall	28.0	21.2	0.7	78.6	195.0	5.8	2.9
	42	104g	North Wall	31.8	18.7	0.7	91.4	185.8	5.8	2.9
	43	104g	North Wall	18.9	18.7	0.9	154.3	238.9	4.7	2.4
	44	104g	North Wall	23.0	4.1	0.8	123.7	212.3	5.7	2.7
	45	104g	North Wall	26.3	19.9	0.8	112.1	202.7	5.9	2.9
	46	104g	North Wall	34.7	15.8	1.0	90.6	168.0	6.3	3.3
	47	104g	North Wall	25.8	21.1	0.7	111.9	207.3	5.6	3.0
	48	104g	North Wall	30.8	21.2	0.9	116.6	187.9	6.2	3.0
	49	104g	North Wall	30.4	21.1	0.7	84.4	190.3	6.3	2.9
	50	104g	North Wall	25.0	20.9	0.8	112.3	204.4	5.8	2.9
	51	104g	North Wall	26.5	20.6	0.9	118.4	181.6	5.6	2.8
	52	104g	North Wall	29.4	20.0	0.9	111.5	195.0	6.3	2.8
	53	104g	North Wall	26.5	19.3	0.9	111.9	181.6	5.8	2.6
	54	104g	North Wall	29.4	20.8	0.8	115.4	187.9	5.5	3.0
	55	104g	North Wall	37.3	22.3	0.8	88.2	180.9	7.0	3.3
	56	104g	North Wall	31.4	21.3	0.9	137.3	190.4	6.3	3.1
	57	104g	North Wall	28.9	7.5	0.9	122.6	185.9	5.9	2.9

Table A-5. Test 2 North wall pressure-time values for sheep nos. 817 and 818 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	North Wall	22.3	19.2	0.8	91.1	212.8	5.1	2.5
	59	104g	North Wall	22.5	19.6	0.8	118.3	207.3	5.5	2.7
	60	104g	North Wall	26.4	22.3	1.1	151.4	233.8	10.4	3.3
	61	104g	North Wall	28.7	21.4	0.8	107.9	198.7	5.8	2.9
	62	104g	North Wall	27.1	20.4	0.9	111.7	200.3	5.8	2.7
	63	104g	North Wall	26.2	21.7	0.8	118.0	182.5	5.9	3.0
	64	104g	North Wall	27.3	12.9	0.7	116.5	199.0	5.8	3.0
	65	104g	North Wall	21.9	19.0	0.8	137.2	200.4	5.1	2.5
	66	104g	North Wall	28.7	20.8	0.8	111.3	181.5	6.0	2.9
	67	104g	North Wall	28.3	20.6	0.8	78.4	194.7	5.8	3.0
	68	104g	North Wall	38.6	20.4	0.8	49.3	144.0	6.6	3.2
	69	104g	North Wall	28.6	20.9	0.7	78.4	200.9	6.2	3.0
	70	104g	North Wall	28.3	20.9	0.6	84.6	163.2	5.5	2.9
	71	104g	North Wall	23.2	19.6	0.8	97.2	207.0	5.2	2.5
	72	104g	North Wall	28.3	10.0	0.8	83.8	186.7	6.1	3.0
	73	104g	North Wall	28.8	12.7	0.8	82.9	185.8	5.8	2.9
	74	104g	North Wall	26.9	19.6	0.8	111.3	194.9	5.7	2.7
	75	104g	North Wall	21.7	18.7	0.8	163.3	239.3	5.5	2.6
	76	104g	North Wall	32.0	21.2	0.8	108.4	182.3	6.6	3.1
	77	104g	North Wall	36.3	22.0	0.9	88.0	186.2	7.0	3.4
	78	104g	North Wall	39.2	21.4	0.8	78.4	172.0	6.4	3.3
	79	104g	North Wall	26.1	20.3	0.7	111.8	194.9	5.9	2.9
	80	104g	North Wall	33.8	21.2	0.8	78.5	163.2	6.0	3.1
	81	104g	North Wall	31.8	21.3	0.8	111.2	180.8	6.5	3.4
	82	104g	North Wall	29.5	21.9	0.8	111.6	194.5	7.3	3.4
	83	104g	North Wall	32.9	22.7	0.8	108.2	166.4	6.3	3.5
	84	104g	North Wall	36.4	21.5	0.7	79.0	180.8	6.8	3.0
	85	104g	North Wall	33.4	20.7	0.8	105.4	180.8	6.7	3.1
	86	104g	North Wall	38.2	20.9	0.8	78.5	163.0	6.4	3.1
	87	104g	North Wall	35.9	21.2	0.9	106.6	162.8	6.8	3.4
	88	104g	North Wall	32.1	21.5	0.9	88.2	181.1	6.3	3.1
	89	104g	North Wall	31.2	14.4	0.9	110.2	166.5	5.9	3.1
	90	104g	North Wall	38.0	22.5	0.8	83.2	167.8	7.3	3.5
	91	104g	North Wall	37.2	20.5	0.7	78.1	180.7	6.5	2.9
	92	104g	North Wall	31.9	19.6	0.8	79.0	181.2	6.1	2.7
	93	104g	North Wall	30.5	21.9	0.8	106.9	180.7	6.8	3.2
	94	104g	North Wall	38.1	23.1	0.8	105.2	181.1	7.9	3.6
	95	104g	North Wall	34.4	13.4	0.8	114.8	166.0	7.2	3.3
	96	104g	North Wall	35.1	22.5	0.8	88.3	180.7	6.2	3.2
	97	104g	North Wall	33.7	21.1	0.8	88.0	167.9	6.4	3.1
	98	104g	North Wall	0.1	0.0	0.2	601.7	601.7	0.0	0.0
	99	104g	North Wall	25.1	21.5	1.1	138.2	207.7	9.7	3.1
	100	104g	North Wall							
Mean				30.1	19.4	0.8	108.9	190.1	6.3	3.0
SD				5.6	4.1	0.1	54.4	47.3	1.1	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-6. Test 2 South wall pressure-time values for sheep nos. 817 and 818

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
7/29/97	1	104g	South Wall	32.1	32.1	0.7	137.8	203.7	7.8	4.3
	2	104g	South Wall	39.1	6.1	0.8	88.8	149.5	7.9	4.4
	3	104g	South Wall	26.6	25.7	0.8	137.8	234.0	6.1	4.1
	4	104g	South Wall	27.7	27.7	0.7	138.6	193.2	7.5	4.2
	5	104g	South Wall	28.9	23.3	0.8	137.5	232.9	7.0	4.3
	6	104g	South Wall	26.1	26.1	0.7	163.5	234.0	7.1	4.2
	7	104g	South Wall	32.1	27.0	0.8	111.2	238.2	5.8	3.9
	8	104g	South Wall	30.4	30.4	0.7	138.5	183.1	7.5	4.1
	9	104g	South Wall	27.4	27.4	0.7	138.6	233.8	6.8	4.0
	10	104g	South Wall	28.1	27.3	0.9	138.6	191.5	6.2	4.0
	11	104g	South Wall	28.2	28.2	0.6	108.4	191.5	7.7	4.3
	12	104g	South Wall	32.1	31.3	0.9	137.3	231.6	6.7	4.2
	13	104g	South Wall	26.5	7.1	0.7	143.3	238.3	7.1	4.2
	14	104g	South Wall	27.3	27.3	0.7	138.5	231.7	7.6	4.1
	15	104g	South Wall	29.8	29.8	0.7	110.3	238.8	7.2	4.3
	16	104g	South Wall	29.9	29.9	0.7	138.5	193.2	7.7	4.2
	17	104g	South Wall	32.9	32.9	0.7	93.5	192.4	8.1	4.5
	18	104g	South Wall	31.8	5.0	0.8	99.0	238.0	7.1	4.1
	19	104g	South Wall	27.4	27.4	0.7	138.6	233.8	7.2	4.1
	20	104g	South Wall	31.1	31.1	0.7	792.9	794.1	7.4	4.3
	21	104g	South Wall	27.7	27.7	0.7	137.6	233.8	6.9	3.9
	22	104g	South Wall	27.4	27.4	0.6	138.7	191.5	7.3	3.9
	23	104g	South Wall	29.4	29.4	0.7	110.3	233.8	6.8	3.9
	24	104g	South Wall	30.3	30.3	0.7	137.5	169.2	7.4	4.3
	25	104g	South Wall	29.1	29.1	0.7	138.6	233.7	7.0	4.1
	26	104g	South Wall	25.9	25.9	0.7	138.9	233.9	7.1	4.0
	27	104g	South Wall	29.5	9.4	0.7	99.9	198.0	7.1	4.1
	28	104g	South Wall	28.2	26.5	1.0	161.5	233.8	6.1	4.1
	29	104g	South Wall	28.3	28.3	0.6	98.2	191.6	6.7	3.6
	30	104g	South Wall	27.9	27.9	0.7	144.7	199.5	6.7	3.9
	31	104g	South Wall	27.5	27.5	0.7	120.4	233.8	6.7	3.8
	32	104g	South Wall	27.1	6.4	0.7	113.2	239.2	6.6	3.7
	33	104g	South Wall	24.5	24.5	0.7	120.5	213.0	6.4	3.7
	34	104g	South Wall	27.7	27.7	0.7	118.7	233.8	6.9	3.9
	35	104g	South Wall	28.1	28.1	0.7	138.6	233.8	6.8	4.1
	36	104g	South Wall	25.0	25.0	0.7	120.3	233.8	6.9	4.0
	37	104g	South Wall	28.4	28.4	0.7	138.5	191.5	7.1	4.2
	38	104g	South Wall	26.3	5.8	0.7	142.8	236.7	7.3	4.1
	39	104g	South Wall	28.2	28.2	0.7	138.6	191.3	7.4	4.2
	40	104g	South Wall	29.4	29.4	0.7	120.2	182.7	7.1	4.0
	41	104g	South Wall	26.5	26.5	0.7	138.6	233.7	7.1	3.8
	42	104g	South Wall	25.3	11.3	0.8	142.8	237.0	5.8	4.1
	43	104g	South Wall	25.5	25.5	0.8	139.8	194.3	6.0	3.5
	44	104g	South Wall	27.8	27.8	0.7	118.6	196.9	6.6	3.7
	45	104g	South Wall	28.1	28.1	0.6	120.6	191.4	6.7	3.9
	46	104g	South Wall	31.8	8.3	0.9	142.5	196.5	7.5	4.5
	47	104g	South Wall	26.5	26.5	0.7	138.6	233.7	6.6	3.9
	48	104g	South Wall	27.3	25.9	0.8	138.5	238.9	6.0	4.0
	49	104g	South Wall	28.8	28.8	0.7	110.5	191.5	6.8	3.9
	50	104g	South Wall	28.8	28.8	0.7	97.4	192.8	7.0	4.0
	51	104g	South Wall	25.5	25.5	0.7	138.9	234.0	6.9	4.0
	52	104g	South Wall	24.9	24.9	0.7	103.8	233.8	6.9	3.9
	53	104g	South Wall	24.3	24.3	0.7	133.1	233.8	6.5	3.7
	54	104g	South Wall	29.7	25.6	0.8	137.4	195.5	6.4	3.9
	55	104g	South Wall	31.8	31.8	0.6	118.2	186.3	7.6	4.4
	56	104g	South Wall	28.7	28.7	0.7	110.2	191.3	7.3	4.1
	57	104g	South Wall	26.3	3.9	0.7	143.0	238.0	7.0	4.1

Table A-6. Test 2 South wall pressure-time values for sheep nos. 817 and 818 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	South Wall	22.6	22.6	0.7	132.1	239.3	6.1	3.5
	59	104g	South Wall	25.5	25.5	0.8	138.7	191.5	6.4	3.8
	60	104g	South Wall	30.7	30.7	0.7	118.5	195.4	7.7	4.5
	61	104g	South Wall	25.0	25.0	0.7	137.4	208.5	6.8	4.1
	62	104g	South Wall	24.4	24.4	0.7	138.6	239.0	6.6	3.8
	63	104g	South Wall	29.9	29.9	0.7	96.7	191.4	7.5	4.1
	64	104g	South Wall	25.3	9.2	0.7	142.8	237.8	7.0	4.0
	65	104g	South Wall	22.9	22.9	0.8	139.1	233.8	6.2	3.7
	66	104g	South Wall	28.7	28.7	0.6	106.0	191.3	7.0	4.1
	67	104g	South Wall	28.7	28.2	0.9	137.3	191.2	5.9	4.0
	68	104g	South Wall	26.9	26.9	0.6	138.5	191.3	7.1	4.0
	69	104g	South Wall	25.8	25.4	0.9	143.8	191.2	5.8	4.0
	70	104g	South Wall	26.3	26.3	0.8	137.6	233.6	6.7	3.9
	71	104g	South Wall	23.5	23.5	0.7	138.7	233.8	6.2	3.6
	72	104g	South Wall	27.7	7.0	0.9	142.6	262.5	6.2	3.9
	73	104g	South Wall	27.8	9.4	0.7	142.9	195.7	6.6	3.9
	74	104g	South Wall	24.6	24.6	0.7	118.5	233.6	6.5	3.6
	75	104g	South Wall	23.9	23.8	1.7	180.9	263.3	11.1	3.8
	76	104g	South Wall	28.7	28.7	0.7	139.4	191.5	6.9	4.2
	77	104g	South Wall	30.6	30.6	0.7	137.3	196.3	7.7	4.3
	78	104g	South Wall	27.0	27.0	0.7	138.3	245.3	7.3	4.1
	79	104g	South Wall	28.3	28.3	0.7	104.3	191.3	6.8	4.0
	80	104g	South Wall	30.7	27.8	0.8	93.4	191.3	6.4	3.9
	81	104g	South Wall	29.5	29.5	0.8	138.4	191.6	7.6	4.4
	82	104g	South Wall	29.7	29.7	0.6	118.2	191.1	7.6	4.4
	83	104g	South Wall	30.2	30.2	0.7	138.2	202.8	7.6	4.3
	84	104g	South Wall	27.6	27.6	0.6	108.0	191.1	6.9	4.2
	85	104g	South Wall	25.8	25.8	0.6	143.6	233.3	7.0	4.1
	86	104g	South Wall	29.2	29.2	0.7	104.3	191.1	7.1	4.0
	87	104g	South Wall	27.2	27.2	0.7	108.7	233.2	7.5	4.2
	88	104g	South Wall	26.1	26.1	0.6	139.1	202.7	7.2	4.0
	89	104g	South Wall	29.7	7.8	0.7	140.6	236.7	7.3	4.3
	90	104g	South Wall	32.5	32.5	0.7	94.4	195.9	7.9	4.2
	91	104g	South Wall	26.9	26.9	0.6	138.2	182.4	6.9	4.2
	92	104g	South Wall	27.7	27.7	0.6	138.4	190.9	6.7	3.8
	93	104g	South Wall	25.7	25.7	0.7	122.0	194.4	7.7	4.1
	94	104g	South Wall	32.7	32.7	0.7	138.1	190.0	8.0	4.5
	95	104g	South Wall	28.0	7.1	0.7	140.4	234.4	7.7	4.4
	96	104g	South Wall	29.9	29.9	0.7	138.2	190.7	7.3	4.1
	97	104g	South Wall	27.2	27.2	0.7	138.2	195.8	7.3	4.1
	98	104g	South Wall	0.1	0.1	0.0	799.4	799.8	0.0	0.0
	99	104g	South Wall	29.5	29.5	0.7	110.1	190.9	7.1	3.9
	100	104g	South Wall							
Mean				27.8	24.5	0.7	142.6	224.1	6.9	4.0
SD				3.8	7.8	0.1	95.8	85.9	1.0	0.5

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-7. Test 3 North wall pressure-time values for sheep nos. 819 and 820

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
7/31/97	1	104g	North Wall	24.9	20.3	0.7	112.4	183.2	6.2	3.2
	2	104g	North Wall	28.2	22.7	0.8	117.0	182.9	7.0	3.3
	3	104g	North Wall	33.2	21.4	0.8	75.2	163.6	6.7	3.2
	4	104g	North Wall	30.4	23.0	0.8	85.5	163.6	6.9	3.4
	5	104g	North Wall	32.2	20.3	0.8	77.6	144.8	6.0	3.0
	6	104g	North Wall	24.8	19.8	0.8	87.8	190.9	5.7	2.5
	7	104g	North Wall	35.9	21.9	0.8	54.5	163.6	6.7	3.2
	8	104g	North Wall	34.3	21.4	0.8	75.2	163.6	6.7	3.1
	9	104g	North Wall	37.4	21.9	0.8	77.4	156.0	6.3	3.0
	10	104g	North Wall	34.5	21.4	0.9	77.8	181.2	6.9	3.1
	11	104g	North Wall	38.2	21.4	0.8	48.8	119.6	6.5	3.0
	12	104g	North Wall	35.1	21.8	0.7	78.2	156.6	6.9	3.2
	13	104g	North Wall	23.5	20.5	0.9	119.7	184.0	5.9	2.6
	14	104g	North Wall	27.3	21.1	0.8	112.0	190.5	5.7	2.8
	15	104g	North Wall	35.4	21.8	0.7	75.0	144.8	7.0	3.4
	16	104g	North Wall	28.7	22.1	0.8	116.0	182.7	6.7	3.4
	17	104g	North Wall	35.5	20.8	0.9	76.4	163.5	6.6	3.0
	18	104g	North Wall	32.2	20.7	0.8	75.2	163.7	6.2	2.9
	19	104g	North Wall	42.3	22.2	0.9	76.3	163.5	7.4	3.3
	20	104g	North Wall	26.0	20.2	0.9	118.3	182.8	6.2	2.7
	21	104g	North Wall	34.2	20.0	0.7	75.2	157.3	6.0	3.0
	22	104g	North Wall	23.5	19.4	0.9	118.5	190.8	5.4	2.4
	23	104g	North Wall	31.5	20.5	0.8	75.2	165.0	5.9	2.7
	24	104g	North Wall	26.8	4.1	0.9	142.6	199.4	6.6	3.3
	25	104g	North Wall	26.5	19.2	0.9	119.5	184.1	5.7	2.6
	27	104g	North Wall	40.0	20.5	0.8	48.8	156.9	6.8	3.1
	28	104g	North Wall	32.8	21.2	0.8	75.2	163.8	6.1	2.9
	29	104g	North Wall	35.4	20.0	0.8	51.1	156.8	6.2	2.9
	30	104g	North Wall	27.9	20.6	0.9	75.2	163.8	6.1	2.7
	31	104g	North Wall	37.8	21.0	0.8	48.8	163.6	6.7	3.3
	32	104g	North Wall	35.0	12.8	0.9	82.8	168.6	6.5	3.3
	33	104g	North Wall	31.4	21.2	0.8	84.0	156.5	6.4	3.2
	34	104g	North Wall	31.1	21.0	0.8	77.9	163.6	6.6	2.9
	35	104g	North Wall	28.1	20.6	0.8	108.6	163.7	5.8	2.7
	36	104g	North Wall	35.4	23.1	0.9	83.9	163.3	6.6	3.3
	37	104g	North Wall	36.3	21.4	0.8	51.2	163.6	6.6	3.1
	38	104g	North Wall	34.2	20.9	0.7	75.2	156.1	6.7	2.8
	39	104g	North Wall	31.1	21.8	0.8	77.1	181.3	6.4	3.4
	40	104g	North Wall	21.9	19.5	1.0	119.6	191.9	5.0	2.4
	41	104g	North Wall	33.8	21.5	0.8	77.9	163.5	6.5	3.1
	42	104g	North Wall	30.7	21.4	0.7	78.4	164.9	6.1	2.8
	43	104g	North Wall	38.0	21.5	0.8	48.7	144.7	6.8	3.1
	44	104g	North Wall	31.6	22.5	0.8	84.6	163.5	6.8	3.3
	45	104g	North Wall	34.9	21.7	0.8	77.6	182.7	7.0	3.1
	46	104g	North Wall	25.2	12.5	0.8	122.3	186.8	5.8	2.9
	47	104g	North Wall	30.1	20.4	0.9	111.9	182.7	6.5	3.1
	48	104g	North Wall	35.0	21.8	0.9	77.8	155.9	6.7	3.4
	50	104g	North Wall	29.1	21.7	0.8	112.5	182.6	6.9	3.2
	51	104g	North Wall	27.8	20.6	1.0	98.6	163.5	5.9	2.7
	52	104g	North Wall	32.4	21.8	0.9	108.5	163.6	6.3	2.9
	53	104g	North Wall	26.4	22.2	0.8	85.7	191.7	6.8	3.3
	54	104g	North Wall	31.3	21.3	0.8	77.6	163.4	6.2	3.1
	55	104g	North Wall	23.0	19.4	0.8	118.4	164.3	5.6	2.5
	56	104g	North Wall	21.8	19.6	1.0	125.0	214.0	5.3	2.4
	57	104g	North Wall	32.2	22.6	0.9	109.3	163.4	6.0	3.2
	58	104g	North Wall	29.4	19.1	0.9	85.6	164.7	5.8	2.6
	59	104g	North Wall	28.0	20.2	0.9	109.5	163.5	6.2	2.6

Table A-7. Test 3 North wall pressure-time values for sheep nos. 819 and 820 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	60	104g	North Wall	28.1	20.2	0.9	77.7	181.3	5.8	2.8
	61	104g	North Wall	40.6	21.1	0.8	49.1	139.7	6.9	3.1
	62	104g	North Wall	27.3	20.5	0.8	85.7	190.6	5.9	2.6
	63	104g	North Wall	32.6	23.6	0.9	111.8	168.1	7.0	3.4
	64	104g	North Wall	37.4	21.3	0.8	51.1	163.3	6.6	3.2
	65	104g	North Wall	29.3	8.3	0.9	116.9	195.6	6.0	3.2
	66	104g	North Wall	32.3	23.8	0.9	115.6	163.2	6.2	3.3
	67	104g	North Wall	23.7	19.6	0.8	143.8	208.3	5.7	2.5
	68	104g	North Wall	37.6	20.9	0.8	77.3	156.4	7.0	3.1
	69	104g	North Wall	33.7	22.4	0.8	104.3	164.3	6.5	3.4
	70	104g	North Wall	29.9	24.0	0.8	85.6	181.0	7.2	3.6
	71	104g	North Wall	33.3	22.9	0.8	106.9	182.3	6.7	3.2
	72	104g	North Wall	34.1	22.0	0.8	77.4	155.7	6.1	3.0
	73	104g	North Wall	31.6	21.7	0.8	85.6	163.2	6.2	3.0
	74	104g	North Wall	31.0	19.7	0.9	98.6	163.5	6.2	2.6
	75	104g	North Wall	31.1	21.9	0.8	84.3	181.1	6.5	3.2
	76	104g	North Wall	23.9	12.6	0.8	121.6	193.8	5.9	2.6
	77	104g	North Wall	30.1	21.0	0.7	78.5	183.6	6.9	3.2
	78	104g	North Wall	37.6	22.3	0.7	75.0	156.3	6.5	3.1
	79	104g	North Wall	29.6	23.9	1.1	108.3	210.1	10.7	3.4
	80	104g	North Wall	31.3	21.1	0.8	87.1	182.5	6.5	2.8
	81	104g	North Wall	32.9	21.5	0.8	77.5	181.0	6.2	3.1
	82	104g	North Wall	35.5	21.9	0.8	74.9	156.1	7.0	3.5
	83	104g	North Wall	29.4	13.4	0.8	111.4	194.8	7.1	3.3
	84	104g	North Wall	28.6	12.9	0.8	115.7	186.3	6.5	3.1
	85	104g	North Wall	32.3	22.3	0.8	87.2	163.3	6.4	3.1
	86	104g	North Wall	37.6	21.2	0.8	77.5	154.1	6.7	2.9
	87	104g	North Wall	32.8	21.1	0.8	84.7	181.3	6.1	3.0
	88	104g	North Wall	20.2	18.7	0.8	154.1	190.3	5.0	2.6
	89	104g	North Wall	32.7	20.9	0.8	84.2	163.3	6.2	2.9
	90	104g	North Wall	33.9	22.5	0.8	83.8	163.1	6.7	3.4
	91	104g	North Wall	31.4	18.1	0.9	88.5	186.4	7.0	3.1
	92	104g	North Wall	31.4	22.3	0.9	76.8	189.8	6.4	3.2
	93	104g	North Wall	34.0	21.2	0.8	84.0	182.3	6.6	3.0
	94	104g	North Wall	31.5	20.4	0.8	84.3	163.1	6.1	3.0
	95	104g	North Wall	23.6	23.2	1.1	137.0	233.2	11.2	3.3
	96	104g	North Wall	30.6	20.1	0.8	90.5	171.7	5.9	3.0
	97	104g	North Wall	27.7	20.6	0.8	137.1	182.3	6.1	2.7
	99	104g	North Wall	33.3	20.2	0.8	74.9	166.3	6.3	3.0
	100	104g	North Wall	29.8	20.8	0.8	140.9	213.7	6.2	2.9
Mean				31.3	20.5	0.8	91.2	172.6	6.5	3.0
SD				4.5	3.0	0.1	23.8	17.6	0.8	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

east wall gage not operable during test 3.

Table A-7. Test 3 South wall pressure-time values for sheep nos. 819 and 820

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
7/31/97	1	104g	South Wall	25.3	25.3	0.7	144.7	233.4	7.0	4.1
	2	104g	South Wall	28.9	28.9	0.6	668.9	668.9	7.5	4.4
	3	104g	South Wall	27.5	27.5	0.7	137.8	201.4	7.2	4.3
	4	104g	South Wall	28.4	28.4	0.6	138.6	203.1	7.5	4.3
	5	104g	South Wall	27.7	27.7	0.7	106.0	185.3	7.0	4.0
	6	104g	South Wall	24.5	24.5	0.7	109.4	192.1	6.4	3.8
	7	104g	South Wall	28.5	28.5	0.7	137.8	190.7	7.2	4.2
	9	104g	South Wall	27.0	27.0	0.7	138.6	232.8	7.2	3.9
	10	104g	South Wall	26.4	26.4	0.7	137.8	203.1	7.3	4.2
	11	104g	South Wall	26.1	26.1	0.7	138.7	233.9	7.1	3.9
	12	104g	South Wall	26.5	26.5	0.7	111.7	193.1	7.1	4.2
	13	104g	South Wall	26.4	26.4	0.7	137.6	195.2	6.5	4.0
	14	104g	South Wall	26.8	26.8	0.6	118.8	195.2	6.6	3.8
	15	104g	South Wall	29.5	29.5	0.7	93.7	203.1	7.5	4.2
	16	104g	South Wall	28.7	28.7	0.7	118.4	190.7	7.6	4.4
	17	104g	South Wall	26.3	26.3	0.6	105.8	203.6	6.9	3.8
	18	104g	South Wall	28.1	28.1	0.7	138.6	203.1	7.0	4.2
	19	104g	South Wall	29.9	29.9	0.7	93.6	190.7	7.4	4.1
	20	104g	South Wall	27.5	27.5	0.7	138.8	183.2	6.8	3.9
	21	104g	South Wall	24.8	24.8	0.7	137.8	195.2	6.8	3.9
	22	104g	South Wall	24.0	24.0	0.7	119.7	234.0	6.4	3.6
	23	104g	South Wall	27.2	27.2	0.6	96.5	183.4	6.5	3.5
	24	104g	South Wall	30.6	26.6	0.8	98.6	199.3	7.6	4.4
	25	104g	South Wall	24.8	24.8	0.7	139.0	234.1	6.3	3.6
	27	104g	South Wall	27.4	27.4	0.6	137.9	193.0	6.9	4.0
	28	104g	South Wall	25.2	25.2	0.6	118.8	191.7	6.7	3.6
	29	104g	South Wall	24.4	24.4	0.6	119.7	190.9	6.6	3.9
	30	104g	South Wall	25.7	25.7	0.7	105.8	190.9	6.4	3.8
	31	104g	South Wall	28.2	28.2	0.8	143.8	203.2	7.2	4.2
	32	104g	South Wall	27.5	8.4	0.7	143.6	238.0	7.5	4.1
	33	104g	South Wall	29.0	29.0	0.7	118.6	181.4	7.2	4.1
	34	104g	South Wall	26.0	26.0	0.6	120.0	203.5	6.8	4.0
	35	104g	South Wall	24.6	24.6	0.6	119.7	190.8	6.5	3.8
	36	104g	South Wall							
	37	104g	South Wall							
	38	104g	South Wall							
	39	104g	South Wall							
	40	104g	South Wall							
	41	104g	South Wall							
	42	104g	South Wall							
	43	104g	South Wall							
	44	104g	South Wall							
	45	104g	South Wall							
	46	104g	South Wall							
	47	104g	South Wall							
	48	104g	South Wall							
	49	104g	South Wall							
	50	104g	South Wall							
	51	104g	South Wall							
	52	104g	South Wall	26.4	26.4	0.7	111.8	232.3	7.2	4.1
	53	104g	South Wall	28.4	28.4	0.6	111.3	203.1	7.3	4.3
	54	104g	South Wall	28.2	28.2	0.6	118.6	185.8	7.1	3.9
	55	104g	South Wall	26.4	26.4	0.7	138.8	195.1	6.3	3.6
	56	104g	South Wall	25.7	25.7	0.8	118.7	239.3	6.2	3.4
	57	104g	South Wall	27.2	27.2	0.7	137.4	189.2	7.4	4.3
	58	104g	South Wall	24.4	24.4	0.6	118.7	233.8	6.5	3.6
	59	104g	South Wall	24.9	24.9	0.6	138.8	233.7	6.4	3.7

Table A-7. Test 3 South wall pressure-time values for sheep nos. 819 and 820 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	60	104g	South Wall	26.4	26.4	0.6	118.3	183.2	6.7	3.6
	61	104g	South Wall	29.1	29.1	0.7	110.3	190.6	7.2	4.1
	62	104g	South Wall	26.9	26.9	0.7	104.9	183.2	6.4	3.7
	63	104g	South Wall	29.3	29.3	0.7	100.7	207.8	7.8	4.3
	64	104g	South Wall	27.4	27.4	0.7	138.6	202.8	7.2	4.1
	65	104g	South Wall	29.0	4.8	0.7	142.6	208.0	7.4	4.1
	66	104g	South Wall	27.0	27.0	0.7	137.4	202.6	7.6	4.3
	67	104g	South Wall	25.4	25.4	0.7	138.8	233.7	6.3	3.8
	68	104g	South Wall	26.5	26.5	0.6	111.8	202.9	7.1	4.1
	70	104g	South Wall	31.9	31.9	0.7	137.2	218.5	8.2	4.4
	71	104g	South Wall	28.6	28.6	0.7	111.5	202.7	7.4	4.3
	72	104g	South Wall	26.4	26.1	0.8	137.4	220.3	6.7	4.0
	73	104g	South Wall	27.5	27.5	0.6	107.1	187.9	7.1	4.0
	74	104g	South Wall	27.6	27.6	0.6	104.1	195.0	6.6	3.8
	75	104g	South Wall	29.1	29.1	0.8	137.4	190.4	7.3	4.2
	76	104g	South Wall	26.3	8.7	0.7	113.6	192.3	6.5	3.7
	77	104g	South Wall	30.1	30.1	0.6	111.1	183.1	7.2	4.3
	78	104g	South Wall	29.7	29.7	0.7	111.1	185.6	7.3	4.2
	79	104g	South Wall	27.1	27.1	0.7	111.1	248.4	7.9	4.6
	80	104g	South Wall	28.8	28.8	0.6	111.0	187.5	7.1	4.1
	81	104g	South Wall	28.9	28.9	0.6	111.1	190.4	7.0	4.0
	82	104g	South Wall	28.7	28.7	0.7	106.0	190.3	7.8	4.4
	83	104g	South Wall	28.9	7.3	0.7	100.6	195.2	7.5	4.2
	84	104g	South Wall	27.5	9.5	0.7	109.9	206.6	7.3	4.3
	85	104g	South Wall	27.0	26.4	0.8	137.5	202.8	5.8	4.1
	86	104g	South Wall	26.7	26.7	0.7	110.2	202.8	7.1	4.0
	87	104g	South Wall	26.3	26.3	0.7	137.3	202.8	6.9	3.9
	88	104g	South Wall	24.0	24.0	0.7	119.4	245.3	6.2	3.6
	89	104g	South Wall	25.9	25.9	0.7	137.9	202.8	7.0	3.8
	90	104g	South Wall	28.5	28.5	0.7	104.8	192.3	7.6	4.3
	91	104g	South Wall	31.3	10.6	0.7	113.1	193.1	7.1	4.2
	92	104g	South Wall	29.0	29.0	0.6	110.9	202.6	7.3	4.1
	93	104g	South Wall	29.4	29.4	0.6	110.1	190.1	7.0	4.1
	94	104g	South Wall	26.4	26.4	0.7	138.3	190.2	6.9	3.9
	95	104g	South Wall	28.4	28.4	0.7	137.0	190.2	7.8	4.7
	96	104g	South Wall	26.9	26.9	0.6	131.6	181.3	6.6	3.9
	97	104g	South Wall	27.0	27.0	0.6	118.3	190.1	6.6	3.9
	98	104g	South Wall	31.3	14.8	0.7	115.4	206.8	7.7	4.1
	99	104g	South Wall	29.1	29.1	0.6	118.0	202.6	6.9	3.8
	100	104g	South Wall	25.5	25.5	0.6	141.0	196.2	6.7	3.9
Mean				27.4	25.6	0.7	128.8	208.0	7.0	4.0
SD				1.8	5.4	0.0	62.5	54.6	0.5	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

east wall gage not operable during test 3.

Table A-8. Test 4 North wall pressure-time values for sheep nos. 821 and 822

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/6/97	1	104g	North Wall	27.2	20.8	0.8	110.3	182.7	6.2	2.8
	2	104g	North Wall	28.9	21.4	0.8	87.2	182.6	6.8	3.2
	3	104g	North Wall	32.8	20.7	0.8	107.0	163.1	5.8	2.9
	4	104g	North Wall	27.2	23.9	0.9	121.7	190.2	6.4	3.3
	5	104g	North Wall	27.1	21.2	0.8	137.3	236.8	5.7	2.7
	6	104g	North Wall	27.6	21.4	0.8	111.6	182.5	6.3	3.2
	7	104g	North Wall	35.7	22.1	0.8	74.9	157.4	7.0	3.4
	8	104g	North Wall	34.3	21.7	0.8	111.8	184.7	6.5	3.5
	9	104g	North Wall	37.6	23.3	0.9	88.1	139.5	7.6	3.7
	10	104g	North Wall	30.2	22.5	0.8	106.8	156.7	6.7	3.5
	11	104g	North Wall	31.8	23.4	0.8	88.2	182.0	7.2	3.6
	12	104g	North Wall	29.2	22.2	0.9	108.1	182.1	6.7	3.5
	13	104g	North Wall	32.5	22.6	0.9	114.1	185.7	6.5	3.2
	14	104g	North Wall	36.4	20.8	0.8	78.2	118.2	6.4	3.0
	15	104g	North Wall	28.2	20.2	0.8	109.6	182.5	6.4	2.9
	16	104g	North Wall	28.3	21.8	0.8	112.3	181.3	6.7	3.4
	17	104g	North Wall	27.3	20.8	0.9	108.2	190.2	5.7	2.9
	18	104g	North Wall	33.1	22.0	0.8	108.2	181.3	6.7	3.2
	19	104g	North Wall	28.6	19.9	0.8	106.8	163.0	6.4	3.0
	20	104g	North Wall	30.9	20.5	0.8	108.1	181.3	6.4	2.9
	21	104g	North Wall	33.2	22.7	0.8	106.7	163.0	6.7	3.4
	22	104g	North Wall	28.6	23.5	1.1	111.6	189.9	10.5	3.4
	23	104g	North Wall	38.3	21.1	0.9	74.9	155.5	6.7	2.9
	24	104g	North Wall	33.9	20.4	0.8	57.8	156.7	6.3	2.9
	25	104g	North Wall	34.3	21.1	0.7	87.0	157.7	6.3	3.2
	26	104g	North Wall	35.0	22.5	0.9	106.7	166.5	6.7	3.2
	27	104g	North Wall	33.3	21.8	0.8	82.7	161.8	6.0	3.2
	28	104g	North Wall	33.4	6.4	0.8	109.8	166.2	6.6	3.2
	29	104g	North Wall	35.5	22.0	0.8	62.9	172.2	6.6	3.2
	30	104g	North Wall	28.1	21.6	0.8	109.8	182.3	6.5	3.0
	31	104g	North Wall	27.2	22.9	1.1	119.4	203.8	10.6	3.3
	32	104g	North Wall	35.2	21.6	0.8	86.1	155.8	6.9	3.4
	33	104g	North Wall	40.2	22.3	0.8	74.8	151.3	6.6	3.2
	34	104g	North Wall	35.2	19.7	0.8	74.8	166.4	6.4	2.8
	35	104g	North Wall	33.4	19.6	0.8	101.6	180.9	6.3	3.1
	36	104g	North Wall	31.0	20.5	0.8	108.1	182.1	6.0	3.0
	37	104g	North Wall	27.0	23.4	1.1	119.2	206.7	10.2	3.1
	38	104g	North Wall	32.0	5.6	0.8	91.7	169.8	6.5	3.3
	39	104g	North Wall	27.6	20.7	0.8	87.3	182.1	5.9	3.0
	40	104g	North Wall	19.8	18.5	0.8	110.2	192.4	4.6	2.4
	41	104g	North Wall	40.8	22.2	0.9	74.7	138.2	7.2	3.4
	42	104g	North Wall	32.6	22.4	0.8	106.6	155.8	7.2	3.6
	43	104g	North Wall	27.5	22.4	0.8	110.8	167.0	6.7	3.2
	44	104g	North Wall	37.7	21.4	0.7	74.8	144.1	6.4	3.3
	45	104g	North Wall	31.3	20.5	0.8	111.6	181.1	6.2	2.8
	46	104g	North Wall	33.8	21.3	0.8	86.9	157.1	6.3	3.1
	47	104g	North Wall	33.2	21.1	0.7	86.9	155.7	6.0	3.1
	48	104g	North Wall	36.2	23.4	0.9	84.4	155.2	6.1	3.1
	49	104g	North Wall	30.9	22.8	0.9	109.4	180.3	6.9	3.6
	50	104g	North Wall	13.6	3.3	1.2	76.9	172.6	7.4	2.2
	51	104g	North Wall	22.4	17.8	0.7	110.1	190.6	5.1	2.3
	52	104g	North Wall	24.4	20.7	0.8	117.9	182.2	5.4	2.9
	53	104g	North Wall	33.4	23.1	0.9	98.2	153.9	6.0	3.2
	54	104g	North Wall	36.0	22.8	0.9	86.8	155.7	6.6	3.2
	55	104g	North Wall	36.6	21.3	0.8	86.8	153.7	6.7	3.2
	56	104g	North Wall	31.5	23.0	0.9	108.9	162.5	7.0	3.5
	57	104g	North Wall	31.9	22.7	0.9	106.5	181.7	7.0	3.4

Table A-8. Test 4 North wall pressure-time values for sheep nos. 821 and 822 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	North Wall	31.0	22.8	0.8	110.3	185.6	6.7	3.6
	59	104g	North Wall	29.1	20.1	0.8	109.4	180.7	6.2	3.0
	60	104g	North Wall	35.1	24.5	0.7	84.0	155.6	7.1	3.5
	61	104g	North Wall	27.1	22.8	0.9	116.1	189.6	6.4	3.4
	62	104g	North Wall	34.7	22.1	0.8	83.9	162.7	6.2	3.1
	63	104g	North Wall	34.9	20.3	0.8	74.8	159.1	5.9	3.0
	64	104g	North Wall	33.2	23.2	0.8	109.2	180.3	6.2	3.2
	65	104g	North Wall	34.4	22.6	0.8	98.2	155.2	6.4	3.3
	66	104g	North Wall	27.0	20.5	0.8	109.2	186.0	6.1	2.8
	67	104g	North Wall	34.3	23.4	0.8	106.4	189.4	6.9	3.5
	68	104g	North Wall	25.4	21.7	0.8	117.6	192.1	6.3	3.1
	69	104g	North Wall	30.0	22.3	0.9	109.2	181.6	6.3	3.1
	70	104g	North Wall	42.9	22.8	0.8	50.7	148.2	6.6	3.3
	71	104g	North Wall	32.3	22.6	0.8	106.4	180.7	7.1	3.6
	72	104g	North Wall	27.4	23.7	0.9	107.7	193.1	6.1	3.2
	73	104g	North Wall	28.2	21.2	0.8	107.8	181.8	6.6	3.2
	74	104g	North Wall	33.6	21.4	0.8	106.4	166.1	6.3	3.0
	75	104g	North Wall	31.6	21.2	0.8	119.1	325.2	6.0	3.1
	76	104g	North Wall	39.5	21.9	0.7	82.2	261.3	6.4	3.1
	77	104g	North Wall	29.8	23.5	0.8	106.3	180.2	6.8	3.4
	78	104g	North Wall	30.9	24.6	0.7	109.0	150.8	6.5	3.4
	79	104g	North Wall	25.2	20.3	0.8	117.6	207.3	5.5	2.7
	80	104g	North Wall	28.8	19.4	0.8	109.0	181.8	6.0	2.8
	81	104g	North Wall	38.3	20.6	0.9	106.4	117.8	6.6	3.2
	82	104g	North Wall	37.4	21.6	0.8	50.9	155.5	6.4	3.1
	83	104g	North Wall	32.0	22.0	0.9	136.7	459.6	6.4	3.1
	84	104g	North Wall	30.0	19.0	0.7	87.2	181.7	5.6	2.7
	85	104g	North Wall	32.3	21.8	0.7	78.2	166.7	6.1	3.0
	86	104g	North Wall	28.7	20.5	0.9	107.9	191.2	5.6	2.7
	87	104g	North Wall	36.6	22.2	0.8	105.9	153.9	7.0	3.5
	88	104g	North Wall	27.5	24.2	0.9	118.9	190.3	5.8	3.3
	89	104g	North Wall	30.4	24.5	1.1	107.8	373.2	11.1	3.6
	90	104g	North Wall	33.8	22.2	0.9	109.0	184.5	6.5	3.4
	91	104g	North Wall	35.4	21.3	0.8	56.6	155.2	6.3	3.0
	92	104g	North Wall	39.4	20.9	0.8	67.2	302.7	6.0	3.2
	93	104g	North Wall	32.3	22.6	0.9	75.5	161.0	6.3	3.1
	94	104g	North Wall	30.1	20.4	0.8	106.3	181.6	6.1	3.0
	95	104g	North Wall	33.7	22.9	0.8	106.3	180.9	6.5	3.2
	96	104g	North Wall	33.4	24.8	0.8	87.8	162.7	6.5	3.2
	97	104g	North Wall	34.1	21.8	0.9	87.0	162.3	6.2	3.1
	98	104g	North Wall	31.4	23.2	0.9	109.0	180.0	6.9	3.3
	99	104g	North Wall	28.4	24.9	1.1	108.9	190.7	11.4	3.5
	100	104g	North Wall	28.8	21.3	0.8	118.9	180.4	6.4	2.9
Mean				31.7	21.3	0.8	99.0	181.0	6.6	3.2
SD				4.5	3.2	0.1	17.7	44.4	1.1	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-9. Test 4 South wall pressure-time values for sheep nos. 821 and 822

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/6/97	1	104g	South Wall	28.0	28.0	0.6	110.4	190.8	6.6	3.9
	2	104g	South Wall	28.7	28.7	0.7	110.2	191.4	7.0	4.2
	3	104g	South Wall	26.2	26.2	0.6	119.3	190.4	7.0	3.8
	4	104g	South Wall	29.8	29.8	0.7	93.5	190.3	7.8	4.7
	5	104g	South Wall	27.8	27.8	0.7	110.2	170.2	6.6	3.9
	6	104g	South Wall	29.4	26.0	0.9	110.2	222.3	6.3	4.1
	7	104g	South Wall	30.6	30.6	0.7	110.0	227.5	7.5	4.2
	8	104g	South Wall	29.0	29.0	0.7	113.6	197.9	7.4	4.2
	9	104g	South Wall	33.6	33.6	0.7	93.6	164.4	8.1	4.6
	10	104g	South Wall	28.0	28.0	0.7	118.4	190.4	7.7	4.2
	11	104g	South Wall	29.6	29.2	1.6	186.1	258.2	14.5	4.5
	12	104g	South Wall	29.7	29.7	0.7	110.8	181.7	7.6	4.1
	13	104g	South Wall	30.7	27.4	1.0	114.2	236.2	6.3	4.2
	14	104g	South Wall	28.4	28.4	0.7	110.0	181.8	6.9	4.0
	15	104g	South Wall	25.9	25.9	0.6	137.3	231.7	6.7	4.0
	16	104g	South Wall	28.2	28.2	0.6	110.0	182.4	7.6	4.2
	17	104g	South Wall	24.9	24.9	0.6	120.4	210.4	6.8	4.0
	18	104g	South Wall	29.5	29.5	0.7	110.0	194.2	7.2	4.1
	19	104g	South Wall	31.0	31.0	0.7	93.4	181.9	6.9	3.9
	20	104g	South Wall	28.1	28.1	0.7	110.3	190.3	7.0	4.1
	21	104g	South Wall	28.2	28.2	0.6	110.4	182.5	7.4	4.1
	22	104g	South Wall	28.6	28.6	0.7	109.9	181.7	7.7	4.4
	23	104g	South Wall	30.4	30.4	0.7	120.2	183.6	7.1	4.1
	24	104g	South Wall	28.7	28.7	0.6	110.1	190.2	6.7	3.8
	25	104g	South Wall	26.5	26.5	0.7	139.1	190.2	7.2	4.0
	26	104g	South Wall	28.6	28.6	0.7	110.1	202.5	7.6	4.2
	27	104g	South Wall	28.3	28.3	0.7	98.8	199.6	7.2	4.1
	28	104g	South Wall	26.9	6.0	0.7	114.1	193.5	7.2	4.2
	29	104g	South Wall	27.2	27.2	0.6	143.3	197.8	7.3	4.2
	30	104g	South Wall	26.1	26.1	0.6	119.1	232.0	7.0	4.0
	31	104g	South Wall	32.7	27.6	0.7	109.9	190.0	7.1	4.6
	32	104g	South Wall	29.7	29.7	0.7	109.9	189.9	7.5	4.2
	33	104g	South Wall	29.5	29.5	0.7	117.9	202.3	7.4	4.2
	34	104g	South Wall	24.6	24.6	0.6	138.3	190.1	6.7	3.9
	35	104g	South Wall	29.5	29.5	0.7	109.9	181.8	6.9	4.0
	36	104g	South Wall	25.8	25.8	0.7	110.0	190.1	6.8	4.0
	37	104g	South Wall	26.9	26.3	0.8	118.3	232.0	7.4	4.3
	38	104g	South Wall	32.1	5.3	0.7	114.3	193.7	7.7	4.2
	39	104g	South Wall	26.6	26.6	0.6	119.8	189.8	7.2	4.2
	40	104g	South Wall	24.2	24.2	0.7	118.4	208.9	5.9	3.5
	41	104g	South Wall	29.1	29.1	0.7	110.3	190.2	7.5	4.2
	42	104g	South Wall	31.9	31.9	0.7	118.0	202.1	7.9	4.4
	43	104g	South Wall	27.8	27.8	0.7	138.0	201.9	7.5	4.2
	44	104g	South Wall	26.9	26.9	0.6	109.8	202.2	7.0	4.2
	45	104g	South Wall	28.7	28.7	0.6	117.7	189.9	6.8	3.9
	46	104g	South Wall	28.9	28.9	0.6	109.8	181.6	7.0	4.2
	47	104g	South Wall	26.7	26.7	0.7	118.0	202.4	6.9	4.1
	48	104g	South Wall	29.1	29.1	0.7	118.1	167.7	7.6	4.3
	49	104g	South Wall	28.2	28.2	0.7	109.8	185.8	7.9	4.2
	50	104g	South Wall	15.0	3.4	1.3	91.4	180.3	6.5	2.9
	51	104g	South Wall	27.6	27.6	0.7	110.5	193.9	6.0	3.4
	52	104g	South Wall	25.3	25.3	0.6	138.2	244.8	6.9	3.8
	53	104g	South Wall	30.8	26.9	0.9	109.8	230.9	6.6	4.2
	54	104g	South Wall	27.4	27.4	0.7	105.1	194.0	7.2	4.2
	55	104g	South Wall	26.8	26.7	1.6	138.2	257.8	12.6	4.3
	56	104g	South Wall	31.3	31.3	0.7	110.6	189.9	7.9	4.4
	57	104g	South Wall	28.4	28.4	0.7	110.7	190.1	7.6	4.2

Table A-9. Test 4 South wall pressure-time values for sheep nos. 821 and 822 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	South Wall	28.4	28.4	0.7	114.2	205.9	7.9	4.4
	59	104g	South Wall	26.2	26.2	0.7	109.8	231.2	7.1	4.0
	60	104g	South Wall	31.0	31.0	0.7	109.9	189.7	8.0	4.7
	61	104g	South Wall	31.9	29.9	0.9	109.7	231.6	6.3	4.4
	62	104g	South Wall	29.5	29.5	0.6	109.8	189.7	7.1	4.1
	63	104g	South Wall	26.4	26.4	0.7	138.1	194.5	6.9	4.0
	64	104g	South Wall	30.3	30.3	0.7	109.7	181.3	7.6	4.3
	65	104g	South Wall	29.0	28.9	0.9	117.7	231.6	6.2	4.2
	66	104g	South Wall	27.6	27.6	0.7	109.7	190.6	6.8	4.0
	67	104g	South Wall	28.9	28.9	0.7	110.6	193.6	7.9	4.3
	68	104g	South Wall	30.3	30.3	0.7	109.7	189.5	7.2	4.2
	69	104g	South Wall	28.2	28.2	0.6	109.7	201.8	7.2	4.2
	70	104g	South Wall	29.9	29.9	0.7	109.7	201.6	7.3	4.0
	71	104g	South Wall	32.6	32.6	0.6	109.6	189.4	7.7	4.4
	72	104g	South Wall	30.1	30.1	0.7	118.0	189.8	7.7	4.5
	73	104g	South Wall	30.5	29.2	0.9	117.7	193.7	7.0	4.1
	74	104g	South Wall	27.1	26.2	1.6	185.7	257.6	11.7	4.1
	75	104g	South Wall	27.9	27.9	0.7	111.3	187.2	7.0	3.9
	76	104g	South Wall	27.5	27.5	1.6	180.2	257.6	12.7	4.1
	77	104g	South Wall	28.9	28.9	0.7	93.2	201.6	7.9	4.3
	78	104g	South Wall	31.2	31.2	0.7	117.5	189.4	8.1	4.6
	79	104g	South Wall	26.3	26.3	0.6	111.5	181.1	6.6	3.6
	80	104g	South Wall	27.3	27.3	0.6	109.8	194.7	6.4	4.0
	81	104g	South Wall	30.1	30.1	0.7	110.6	189.6	7.2	3.9
	82	104g	South Wall	29.4	29.4	0.6	93.1	230.8	7.2	3.9
	83	104g	South Wall	28.4	28.4	0.7	110.9	184.5	7.3	4.1
	84	104g	South Wall	26.0	26.0	0.7	119.0	230.9	6.4	3.8
	85	104g	South Wall	29.6	29.6	0.6	117.6	181.2	7.1	3.8
	86	104g	South Wall	27.5	27.5	0.6	111.3	185.2	6.5	3.7
	87	104g	South Wall	28.4	28.4	0.7	109.8	193.0	7.8	4.3
	88	104g	South Wall	29.3	28.5	0.8	109.5	230.4	7.2	4.4
	89	104g	South Wall	32.3	32.3	0.7	117.5	189.3	8.2	4.5
	90	104g	South Wall	29.9	29.9	0.7	110.3	205.7	7.7	4.2
	91	104g	South Wall	27.5	27.5	0.7	117.5	189.4	7.1	3.9
	92	104g	South Wall	26.6	26.6	0.7	109.8	194.5	7.1	3.8
	93	104g	South Wall	27.1	27.1	0.7	105.4	193.3	7.3	4.0
	94	104g	South Wall	26.4	26.4	0.7	137.9	232.4	6.8	3.9
	95	104g	South Wall	29.8	29.8	0.7	109.9	186.0	7.5	4.3
	96	104g	South Wall	28.7	28.7	0.7	117.8	230.4	7.6	4.5
	97	104g	South Wall	30.8	28.9	0.9	109.5	193.4	5.9	4.1
	98	104g	South Wall	31.4	31.4	0.7	92.8	201.1	7.9	4.6
	99	104g	South Wall	30.5	30.5	0.7	109.4	201.3	8.2	4.7
	100	104g	South Wall	28.5	28.5	0.6	109.6	193.4	6.9	4.1
Mean				28.5	27.7	0.7	115.5	200.2	7.4	4.1
SD				2.3	4.4	0.2	15.8	20.6	1.3	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-10. Test 4 East wall pressure-time values for sheep nos. 821 and 822

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/6/97	1	104g	East Wall	20.0	3.0	2.4	239.1	304.0	17.3	6.3
8/6/97	2	104g	East Wall	17.8	2.7	2.3	238.7	352.0	17.8	6.5
8/6/97	3	104g	East Wall	16.9	2.7	2.5	240.0	352.0	17.5	6.3
8/6/97	4	104g	East Wall	17.5	3.9	2.5	245.3	316.9	17.2	6.8
8/6/97	5	104g	East Wall	17.2	3.0	2.3	201.3	352.0	16.4	6.0
8/6/97	6	104g	East Wall	19.1	3.1	2.3	227.1	316.8	18.6	6.9
8/6/97	7	104g	East Wall	18.2	3.4	1.8	226.9	318.7	14.9	6.7
8/6/97	8	104g	East Wall	17.3	7.0	2.5	222.9	351.7	19.3	6.9
8/6/97	9	104g	East Wall	19.9	3.6	2.5	217.8	316.0	18.8	7.5
8/6/97	10	104g	East Wall	17.7	3.6	2.2	221.6	351.1	19.6	6.9
8/6/97	11	104g	East Wall	21.2	3.2	2.2	216.8	303.7	20.3	7.4
8/6/97	12	104g	East Wall	19.0	3.1	2.3	223.2	350.9	19.6	7.2
8/6/97	13	104g	East Wall	19.8	6.2	0.7	169.1	249.9	4.3	6.8
8/6/97	14	104g	East Wall	17.9	3.1	2.5	221.8	316.8	17.9	6.3
8/6/97	15	104g	East Wall	21.4	3.5	1.9	195.9	272.0	14.6	6.3
8/6/97	16	104g	East Wall	18.6	3.0	2.4	221.7	322.9	17.8	6.9
8/6/97	17	104g	East Wall	18.5	3.1	2.7	218.9	351.4	17.7	6.2
8/6/97	18	104g	East Wall	19.6	3.8	1.0	166.8	295.4	5.3	6.7
8/6/97	19	104g	East Wall	15.5	3.1	1.2	205.4	333.0	6.0	6.1
8/6/97	20	104g	East Wall	21.6	3.6	2.6	220.5	310.5	16.3	6.2
8/6/97	21	104g	East Wall	19.0	3.1	2.6	220.7	350.7	18.4	6.7
8/6/97	22	104g	East Wall	16.9	3.2	0.9	205.2	284.4	4.8	6.8
8/6/97	23	104g	East Wall	16.8	3.3	2.6	238.9	351.4	16.0	6.5
8/6/97	24	104g	East Wall	17.5	3.2	2.2	226.9	316.7	16.8	6.1
8/6/97	25	104g	East Wall	17.2	3.6	2.7	239.6	362.3	17.6	6.4
8/6/97	26	104g	East Wall	24.6	6.6	1.2	163.1	248.7	7.1	6.9
8/6/97	27	104g	East Wall	18.0	3.4	2.6	241.7	318.5	16.6	6.2
8/6/97	28	104g	East Wall	17.7	9.5	2.4	221.7	316.5	17.5	6.7
8/6/97	29	104g	East Wall	18.7	6.0	2.4	225.2	312.3	16.2	6.5
8/6/97	30	104g	East Wall	19.0	3.4	2.5	220.7	351.2	17.4	6.2
8/6/97	31	104g	East Wall	18.0	3.5	2.4	244.9	316.5	18.8	6.9
8/6/97	32	104g	East Wall	19.9	3.1	2.7	221.9	332.6	19.5	6.9
8/6/97	33	104g	East Wall	19.0	2.9	0.8	177.1	250.7	5.3	6.6
8/6/97	34	104g	East Wall	18.8	3.7	2.7	223.6	332.5	16.1	6.0
8/6/97	35	104g	East Wall	19.4	3.1	2.5	221.5	334.6	16.4	6.3
8/6/97	36	104g	East Wall	18.3	3.0	2.3	221.7	323.0	15.9	6.2
8/6/97	37	104g	East Wall	18.2	3.9	2.4	226.6	316.2	16.8	6.6
8/6/97	38	104g	East Wall	19.0	7.7	2.2	221.9	316.4	17.9	6.8
8/6/97	39	104g	East Wall	19.2	2.9	1.4	205.1	316.0	7.7	6.3
8/6/97	40	104g	East Wall	15.2	2.4	2.1	245.7	333.2	12.7	5.3
8/6/97	41	104g	East Wall	19.3	3.0	2.4	239.1	353.8	17.6	6.7
8/6/97	42	104g	East Wall	18.7	3.9	2.3	221.0	350.4	19.6	7.1
8/6/97	43	104g	East Wall	16.3	2.5	2.5	239.2	350.4	16.8	6.6
8/6/97	44	104g	East Wall	18.1	2.8	2.8	226.3	350.7	18.3	6.5
8/6/97	45	104g	East Wall	16.8	2.8	1.8	223.2	322.6	15.9	6.1
8/6/97	46	104g	East Wall	18.1	3.0	2.4	223.1	352.8	17.0	6.6
8/6/97	47	104g	East Wall	18.9	4.3	2.0	226.7	316.0	14.9	6.6
8/6/97	48	104g	East Wall	18.7	2.9	1.0	167.6	248.6	5.5	6.3
8/6/97	49	104g	East Wall	19.3	2.9	2.2	220.3	316.0	19.2	7.0
8/6/97	50	104g	East Wall	20.1	4.5	3.3	74.3	193.0	23.9	8.0
8/6/97	51	104g	East Wall	15.2	3.2	1.8	227.4	333.3	12.5	5.3
8/6/97	52	104g	East Wall	17.2	3.1	2.6	239.5	351.3	17.2	6.1
8/6/97	53	104g	East Wall	17.6	3.3	2.4	239.1	315.9	17.8	6.9
8/6/97	54	104g	East Wall	18.8	3.2	2.3	221.2	350.7	16.4	6.5
8/6/97	55	104g	East Wall	17.4	2.6	2.3	221.4	350.8	17.7	6.5
8/6/97	56	104g	East Wall	18.1	3.4	2.3	238.9	353.3	19.1	7.0
8/6/97	57	104g	East Wall	16.6	3.3	2.4	238.9	352.4	18.9	6.9

Table A-10. Test 4 East wall pressure-time values for sheep nos. 821 and 822 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/6/97	58	104g	East Wall	20.7	5.3	2.3	221.8	293.2	18.3	7.2
8/6/97	59	104g	East Wall	17.1	2.7	2.4	221.4	360.8	16.2	6.4
8/6/97	60	104g	East Wall	17.8	3.4	2.4	220.9	315.7	19.3	7.1
8/6/97	61	104g	East Wall	22.4	4.2	2.3	195.5	306.4	17.6	7.0
8/6/97	62	104g	East Wall	18.7	3.0	2.4	217.8	315.6	16.8	6.1
8/6/97	63	104g	East Wall	18.7	3.3	2.4	227.4	316.5	17.5	6.2
8/6/97	64	104g	East Wall	20.3	3.3	2.4	217.0	294.1	17.1	6.8
8/6/97	65	104g	East Wall	20.2	3.1	2.3	216.9	297.0	16.9	6.7
8/6/97	66	104g	East Wall	17.4	3.3	2.7	240.1	351.3	18.0	6.3
8/6/97	67	104g	East Wall	17.8	3.3	2.3	220.9	349.9	19.4	7.2
8/6/97	68	104g	East Wall	18.6	3.0	1.9	221.1	315.4	14.6	6.4
8/6/97	69	104g	East Wall	18.2	3.2	2.4	221.6	336.2	17.0	6.6
8/6/97	70	104g	East Wall	17.9	2.8	2.4	244.4	315.3	17.3	6.6
8/6/97	71	104g	East Wall	18.4	2.8	2.4	226.3	335.9	18.8	7.0
8/6/97	72	104g	East Wall	16.2	4.0	2.3	222.5	350.1	18.6	6.6
8/6/97	73	104g	East Wall	20.7	3.3	2.4	227.5	292.9	16.3	6.2
8/6/97	74	104g	East Wall	16.3	2.6	2.3	237.5	353.5	17.1	6.2
8/6/97	75	104g	East Wall	17.9	2.9	2.4	225.3	315.6	15.8	6.3
8/6/97	76	104g	East Wall	19.3	3.1	2.4	219.7	315.6	17.2	6.6
8/6/97	77	104g	East Wall	18.4	3.2	2.8	219.8	349.8	18.7	6.7
8/6/97	78	104g	East Wall	18.0	2.7	2.7	237.6	349.7	19.2	6.9
8/6/97	79	104g	East Wall	17.6	3.9	2.6	217.6	350.7	15.3	5.8
8/6/97	80	104g	East Wall	24.5	3.7	2.5	189.7	248.0	16.2	6.0
8/6/97	81	104g	East Wall	16.1	3.3	2.6	238.8	350.3	16.7	6.4
8/6/97	82	104g	East Wall	18.2	3.1	2.2	244.5	350.4	15.6	6.3
8/6/97	83	104g	East Wall	18.5	3.8	2.3	219.9	315.1	17.1	6.5
8/6/97	84	104g	East Wall	19.8	3.6	1.2	172.8	274.7	6.1	5.8
8/6/97	85	104g	East Wall	17.5	3.2	2.6	221.1	350.1	16.0	6.3
8/6/97	86	104g	East Wall	17.5	3.3	1.3	221.2	294.4	7.2	5.7
8/6/97	87	104g	East Wall	18.4	4.0	2.4	221.1	318.4	18.8	6.9
8/6/97	88	104g	East Wall	19.1	2.9	1.2	203.6	315.2	6.9	6.7
8/6/97	89	104g	East Wall	19.1	3.2	2.2	237.5	349.2	17.9	7.0
8/6/97	90	104g	East Wall	17.6	5.0	0.8	170.5	250.7	6.9	6.8
8/6/97	91	104g	East Wall	16.1	2.5	2.2	226.1	349.9	15.5	6.4
8/6/97	92	104g	East Wall	19.3	3.1	2.3	237.7	331.7	16.3	6.3
8/6/97	93	104g	East Wall	17.3	4.3	2.8	239.4	316.1	18.1	6.4
8/6/97	94	104g	East Wall	18.3	2.8	2.3	220.2	336.2	16.1	6.1
8/6/97	95	104g	East Wall	18.4	3.0	2.0	226.2	315.2	10.8	6.8
8/6/97	96	104g	East Wall	18.6	2.9	0.6	136.4	247.5	4.0	6.2
8/6/97	97	104g	East Wall	18.5	3.3	2.3	227.7	349.7	16.9	6.5
8/6/97	98	104g	East Wall	18.8	3.3	0.7	168.2	256.5	4.5	6.9
8/6/97	99	104g	East Wall	23.2	4.1	0.8	165.8	220.9	5.1	6.7
8/6/97	100	104g	East Wall	15.1	3.0	2.6	238.5	361.9	17.1	6.4
Mean				18.5	3.5	2.2	217.9	320.7	15.5	6.5
SD				1.7	1.1	0.6	25.8	34.1	4.5	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-11. Test 5 North wall pressure-time values for sheep nos. 825 and 826

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/26/97	1	104g	North Wall	35.0	21.6	0.8	109.6	155.5	6.5	3.4
	2	104g	North Wall	30.0	23.6	0.9	109.0	217.8	6.7	3.3
	3	104g	North Wall	33.8	22.1	0.8	109.4	179.9	6.6	3.3
	4	104g	North Wall	31.6	21.4	0.7	111.4	189.4	6.7	3.0
	5	104g	North Wall	35.2	21.0	0.6	78.9	180.4	6.0	2.9
	6	104g	North Wall	32.0	20.2	0.8	109.5	191.2	6.1	3.0
	7	104g	North Wall	35.1	21.7	0.8	111.5	180.0	6.6	3.1
	8	104g	North Wall	32.0	20.2	0.8	109.4	193.4	5.9	3.0
	9	104g	North Wall	31.8	22.9	0.8	118.0	180.5	6.4	3.4
	10	104g	North Wall	37.5	22.3	0.7	91.9	160.1	6.7	3.2
	11	104g	North Wall	26.8	24.2	0.7	110.8	189.8	5.4	3.2
	12	104g	North Wall	31.1	21.9	0.9	91.2	193.6	6.0	3.2
	13	104g	North Wall	32.3	22.5	0.8	109.3	179.9	6.6	3.2
	14	104g	North Wall	33.8	24.1	0.7	115.2	204.9	6.7	3.4
	15	104g	North Wall	31.1	21.1	0.8	109.5	180.7	6.7	3.1
	16	104g	North Wall	31.5	24.4	0.8	110.6	179.8	6.3	3.4
	17	104g	North Wall	35.4	22.5	0.7	109.3	180.2	6.9	3.4
	18	104g	North Wall	29.2	24.4	1.1	111.2	232.6	11.5	3.4
	19	104g	North Wall	35.2	20.3	0.7	85.9	157.7	6.1	3.0
	20	104g	North Wall	35.6	22.0	0.7	111.3	179.8	6.4	3.1
	21	104g	North Wall	33.3	22.5	0.8	111.4	192.7	7.0	3.5
	22	104g	North Wall	33.3	22.2	0.8	107.7	198.3	6.1	3.2
	23	104g	North Wall	27.2	23.9	1.1	153.4	233.2	10.8	3.2
	24	104g	North Wall	33.7	22.2	0.7	60.9	217.9	6.4	3.2
	25	104g	North Wall	30.1	21.5	0.9	136.6	156.0	5.6	3.0
	26	104g	North Wall	32.1	6.7	0.9	115.6	194.4	6.6	3.1
	27	104g	North Wall	30.8	22.8	0.8	115.0	221.3	7.0	3.4
	28	104g	North Wall	29.9	21.8	0.8	110.8	212.8	6.3	3.2
	29	104g	North Wall	35.5	20.5	0.8	87.6	180.1	6.0	2.9
	30	104g	North Wall	29.6	20.0	0.8	87.8	209.4	5.8	2.7
	31	104g	North Wall	32.3	21.8	0.7	109.4	179.6	5.9	3.0
	32	104g	North Wall	31.9	24.4	0.7	109.5	188.9	6.7	3.6
	33	104g	North Wall	37.6	20.5	0.8	78.0	156.8	6.2	2.8
	34	104g	North Wall	25.2	19.9	0.8	109.5	233.8	5.3	2.7
	35	104g	North Wall	22.1	20.4	1.1	155.0	255.4	9.2	2.7
	36	104g	North Wall	27.1	20.1	0.8	117.2	215.6	5.7	2.7
	37	104g	North Wall	36.5	21.7	0.8	86.8	180.2	6.2	3.0
	38	104g	North Wall	29.6	24.5	1.1	111.1	257.1	10.9	3.4
	39	104g	North Wall	34.1	22.6	0.8	109.2	179.6	6.7	3.2
	40	104g	North Wall	34.6	22.2	0.7	108.8	155.6	6.3	3.3
	41	104g	North Wall	25.8	21.2	1.0	112.1	232.3	10.5	3.4
	42	104g	North Wall	22.1	19.7	0.9	161.8	260.3	5.3	2.4
	43	104g	North Wall	29.0	23.5	0.9	110.4	254.5	6.2	3.4
	44	104g	North Wall	29.5	20.3	0.8	85.9	232.8	6.1	2.8
	45	104g	North Wall	26.0	20.8	0.8	111.2	254.6	6.1	3.1
	46	104g	North Wall	43.5	22.5	0.8	49.2	154.8	5.9	3.1
	47	104g	North Wall	28.7	22.8	0.7	111.0	220.2	6.2	3.2
	48	104g	North Wall	39.5	20.3	0.8	51.7	162.0	6.2	2.8
	49	104g	North Wall	30.2	20.7	0.8	110.8	193.4	5.5	3.0
	50	104g	North Wall	32.6	23.1	0.8	109.2	188.9	6.2	3.1
	51	104g	North Wall	30.0	23.9	0.8	109.0	217.3	6.5	3.4
	52	104g	North Wall	34.2	23.0	0.8	87.7	155.7	6.1	3.2
	53	104g	North Wall	34.0	21.8	0.8	109.2	209.3	5.6	3.0
	54	104g	North Wall	30.4	24.3	0.7	108.8	180.3	6.3	3.3
	55	104g	North Wall	29.9	23.3	0.8	111.4	234.8	6.5	3.1
	56	104g	North Wall	29.7	22.5	0.7	109.0	216.9	5.6	3.0
	57	104g	North Wall	27.1	23.4	1.1	147.6	254.5	10.4	3.1

Table A-11. Test 5 North wall pressure-time values for sheep nos. 825 and 826 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	North Wall	35.5	21.8	0.8	85.0	179.7	6.4	3.2
	59	104g	North Wall	28.8	23.1	0.7	118.8	237.0	6.2	3.4
	60	104g	North Wall	31.4	23.5	0.9	109.1	214.5	6.3	3.3
	61	104g	North Wall	29.0	23.6	0.8	118.7	251.4	6.5	3.4
	62	104g	North Wall	30.3	23.9	0.8	118.7	248.8	6.6	3.4
	63	104g	North Wall	35.1	22.4	0.8	109.2	215.7	6.5	3.3
	64	104g	North Wall	31.3	23.4	0.8	321.3	667.2	6.4	4.4
	65	104g	North Wall	30.5	22.8	0.7	110.8	219.6	6.2	3.5
	66	104g	North Wall	31.6	22.9	0.8	111.2	188.5	6.9	3.5
	67	104g	North Wall	39.5	21.8	0.8	109.0	179.7	6.0	3.0
	68	104g	North Wall	35.8	22.6	0.8	83.3	160.0	6.3	3.1
	69	104g	North Wall	41.6	23.0	0.6	69.2	262.4	6.2	3.5
	70	104g	North Wall	27.3	23.5	0.9	260.0	668.3	5.8	3.5
	71	104g	North Wall	29.2	22.6	1.0	668.4	668.4	5.9	5.3
	72	104g	North Wall	33.4	22.8	0.6	108.8	148.0	6.5	3.2
	73	104g	North Wall	33.5	22.4	0.9	87.6	208.8	5.2	3.0
	74	104g	North Wall	33.9	19.3	0.8	110.6	214.0	6.0	2.9
	75	104g	North Wall	45.9	21.4	0.7	59.7	112.4	6.2	3.2
	76	104g	North Wall	30.4	20.1	0.8	86.8	183.8	5.7	2.5
	77	104g	North Wall	34.5	21.9	0.7	109.0	154.6	6.4	3.2
	78	104g	North Wall	29.5	22.9	0.7	110.8	212.0	6.6	3.5
	79	104g	North Wall	34.1	20.0	1.0	85.8	197.7	10.7	3.3
	80	104g	North Wall	29.3	20.8	0.8	108.8	211.9	6.5	3.1
	81	104g	North Wall	34.7	22.3	0.7	108.9	158.2	6.1	3.2
	82	104g	North Wall	30.6	20.0	0.8	111.0	211.9	5.8	2.7
	83	104g	North Wall	28.6	22.4	0.8	108.6	154.4	6.4	3.3
	84	104g	North Wall	42.0	20.5	0.7	60.5	157.1	6.2	2.9
	85	104g	North Wall	36.5	20.6	0.7	83.5	179.2	6.2	3.0
	86	104g	North Wall	33.3	21.6	0.8	110.8	179.6	6.8	3.2
	87	104g	North Wall	33.4	21.2	0.7	87.7	197.9	6.0	2.9
	88	104g	North Wall	34.6	21.0	0.8	110.9	179.5	6.1	3.1
	89	104g	North Wall	33.5	23.6	0.9	108.9	189.2	5.9	3.2
	90	104g	North Wall	39.9	20.6	0.9	87.3	148.1	6.1	3.0
	91	104g	North Wall	31.6	21.8	0.9	108.9	195.0	5.8	3.1
	92	104g	North Wall	33.0	22.8	0.7	87.5	179.5	6.8	3.2
	93	104g	North Wall	29.8	23.2	1.1	108.7	252.8	10.4	3.4
	94	104g	North Wall	35.6	21.7	0.6	74.2	148.0	6.5	3.2
	95	104g	North Wall	32.7	22.0	0.8	109.0	158.4	5.8	3.1
	96	104g	North Wall	34.2	22.2	0.7	87.3	162.0	6.0	3.0
	97	104g	North Wall	36.4	21.3	0.7	83.2	154.3	6.3	3.1
	98	104g	North Wall	29.0	19.2	0.8	110.8	179.3	6.4	3.1
	99	104g	North Wall	38.5	20.8	0.8	87.5	154.6	6.2	3.0
	100	104g	North Wall	27.6	22.4	1.0	108.9	214.3	5.2	2.8
Mean				32.4	21.9	0.8	113.1	209.1	6.6	3.2
SD				4.1	2.0	0.1	64.9	87.1	1.3	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-12. Test 5 South wall pressure-time values for sheep nos. 825 and 826

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/26/97	1	104g	South Wall	27.7	27.7	0.7	138.5	232.0	7.8	4.3
	2	104g	South Wall	27.4	27.4	0.7	137.6	235.0	8.0	4.6
	3	104g	South Wall	29.5	29.5	0.7	137.9	237.4	7.6	4.2
	4	104g	South Wall	29.7	29.7	0.7	138.2	235.4	7.3	4.3
	5	104g	South Wall	25.3	25.3	0.6	138.7	231.6	6.7	4.0
	6	104g	South Wall	27.3	27.3	0.7	138.2	235.2	7.1	4.0
	7	104g	South Wall	28.5	28.5	0.7	153.4	233.3	7.1	4.0
	8	104g	South Wall	26.5	26.5	0.7	138.0	231.4	7.0	3.9
	9	104g	South Wall	32.2	32.2	0.7	138.7	238.0	7.9	4.5
	10	104g	South Wall	29.1	29.1	0.6	143.1	235.5	7.5	4.0
	11	104g	South Wall	36.8	26.5	0.7	117.9	229.7	8.5	4.6
	12	104g	South Wall	31.0	31.0	0.7	140.9	238.4	7.5	4.1
	13	104g	South Wall	30.0	30.0	0.7	138.3	233.0	7.3	4.2
	14	104g	South Wall	32.6	32.6	0.7	156.0	238.8	8.0	4.5
	15	104g	South Wall	27.4	27.4	0.6	163.9	235.4	7.1	4.3
	16	104g	South Wall	31.6	31.6	0.7	124.1	238.6	8.0	4.8
	17	104g	South Wall	28.5	28.5	0.7	153.4	236.5	7.9	4.2
	18	104g	South Wall	32.2	32.2	0.7	138.1	239.6	8.3	4.9
	19	104g	South Wall	28.0	28.0	0.7	154.7	254.3	6.8	3.9
	20	104g	South Wall	26.6	26.6	0.7	162.6	236.6	7.3	4.2
	21	104g	South Wall	31.4	31.4	0.7	142.1	192.7	8.1	4.4
	22	104g	South Wall	30.2	27.0	0.8	138.1	247.3	7.2	4.4
	23	104g	South Wall	33.3	27.4	0.8	138.1	235.7	8.2	4.7
	24	104g	South Wall	32.0	32.0	0.7	140.7	239.6	7.6	4.4
	25	104g	South Wall	29.7	29.7	0.7	138.8	254.2	7.3	3.9
	26	104g	South Wall	29.5	6.0	0.7	142.4	239.0	7.4	4.3
	27	104g	South Wall	29.5	29.5	0.6	145.0	233.0	7.9	4.4
	28	104g	South Wall	30.0	30.0	0.7	137.6	234.9	7.4	4.1
	29	104g	South Wall	25.8	25.4	0.9	163.9	301.3	5.0	4.0
	30	104g	South Wall	26.0	26.0	0.6	154.7	232.5	6.8	3.7
	31	104g	South Wall	30.1	26.9	0.7	138.4	237.4	6.5	4.0
	32	104g	South Wall	30.2	30.2	0.7	138.1	236.9	8.3	4.7
	33	104g	South Wall	29.3	29.3	0.7	137.5	264.6	6.8	4.0
	34	104g	South Wall	27.3	27.3	0.6	139.5	262.6	6.5	3.9
	35	104g	South Wall	27.4	27.4	0.6	138.2	237.3	6.7	4.1
	36	104g	South Wall	27.7	27.7	0.7	138.4	262.6	6.6	3.8
	37	104g	South Wall	29.2	29.2	0.7	137.7	262.6	7.1	4.1
	38	104g	South Wall	31.9	31.9	0.7	85.7	267.4	8.0	4.6
	39	104g	South Wall	28.9	27.3	0.8	155.6	230.6	5.7	4.2
	40	104g	South Wall	28.9	28.9	0.7	162.2	233.7	7.6	4.3
	41	104g	South Wall	28.2	27.2	0.8	155.8	253.9	7.8	4.5
	42	104g	South Wall	26.9	26.9	0.7	117.9	254.1	6.2	3.6
	43	104g	South Wall	33.0	31.3	0.7	137.9	236.7	8.2	4.9
	44	104g	South Wall	27.8	25.7	0.9	138.1	262.3	5.5	4.1
	45	104g	South Wall	27.7	26.5	0.9	137.4	245.7	6.9	4.1
	46	104g	South Wall	27.9	27.4	0.8	138.0	254.0	6.4	4.0
	47	104g	South Wall	29.4	29.4	0.7	155.7	236.7	8.0	4.4
	48	104g	South Wall	27.8	27.8	0.7	138.2	239.4	6.7	4.0
	49	104g	South Wall	26.5	26.5	0.7	154.3	235.6	7.1	4.1
	50	104g	South Wall	29.7	29.7	0.7	138.0	236.0	7.6	4.2
	51	104g	South Wall	28.7	28.7	0.7	137.2	229.3	7.7	4.3
	52	104g	South Wall	31.6	26.9	0.8	138.0	237.0	7.4	4.2
	53	104g	South Wall	31.7	27.8	0.7	137.2	234.5	7.1	4.3
	54	104g	South Wall	29.3	29.3	0.7	138.0	236.8	7.9	4.6
	55	104g	South Wall	30.2	27.4	0.8	137.8	234.2	8.2	4.8
	56	104g	South Wall	29.0	26.2	0.8	154.4	261.9	6.9	4.1
	57	104g	South Wall	28.9	28.0	0.8	137.1	271.3	7.1	4.4

Table A-12. Test 5 South wall pressure-time values for sheep nos. 825 and 826 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	South Wall	28.8	28.8	0.6	137.9	232.4	7.2	3.9
	59	104g	South Wall	31.4	31.4	0.7	119.0	215.3	8.0	4.5
	60	104g	South Wall	31.3	28.7	0.8	137.8	260.3	6.7	4.4
	61	104g	South Wall	29.2	29.2	0.6	138.3	238.3	7.8	4.3
	62	104g	South Wall	30.1	30.1	0.7	153.0	236.5	8.0	4.6
	63	104g	South Wall	29.3	29.3	0.7	137.8	236.6	7.4	4.3
	64	104g	South Wall	29.0	28.0	0.9	137.8	245.5	7.3	4.3
	65	104g	South Wall	30.5	30.5	0.7	104.2	237.9	7.9	4.4
	66	104g	South Wall	32.4	32.4	0.7	137.7	236.3	8.0	4.5
	67	104g	South Wall	28.0	28.0	0.7	123.9	228.8	7.2	4.0
	68	104g	South Wall	30.5	30.5	0.7	139.0	212.4	7.5	4.3
	69	104g	South Wall	28.2	28.2	0.7	152.9	236.6	7.4	4.2
	70	104g	South Wall	32.8	25.7	0.8	142.0	233.8	7.0	4.4
	71	104g	South Wall	29.8	27.4	0.7	155.5	235.6	7.7	4.5
	72	104g	South Wall	28.4	28.4	0.7	137.9	234.1	7.6	4.2
	73	104g	South Wall	26.7	25.4	0.8	139.0	268.0	6.9	4.1
	74	104g	South Wall	29.5	29.5	0.7	137.9	262.6	6.7	3.8
	75	104g	South Wall	28.5	28.5	0.6	141.1	237.7	7.3	4.0
	76	104g	South Wall	25.0	25.0	0.7	167.4	237.3	6.6	3.9
	77	104g	South Wall	31.6	31.6	0.7	119.0	234.4	7.6	4.1
	78	104g	South Wall	30.1	30.1	0.7	137.9	236.4	7.9	4.5
	79	104g	South Wall	33.2	25.9	1.5	137.7	234.1	12.6	4.4
	80	104g	South Wall	29.0	29.0	0.7	137.8	234.2	7.4	4.3
	81	104g	South Wall	30.0	30.0	0.7	137.6	239.7	7.6	4.1
	82	104g	South Wall	24.9	24.9	0.6	137.8	234.3	6.7	3.9
	83	104g	South Wall	35.1	28.4	0.7	137.8	180.9	7.5	4.3
	84	104g	South Wall	30.3	30.3	0.6	138.3	234.4	7.0	4.2
	85	104g	South Wall	26.7	26.7	0.7	138.1	261.8	7.0	4.0
	86	104g	South Wall	28.0	28.0	0.7	155.2	236.7	7.6	4.1
	87	104g	South Wall	29.6	29.6	0.6	138.0	228.8	7.0	4.1
	88	104g	South Wall	27.3	27.3	0.6	138.8	253.4	7.3	4.2
	89	104g	South Wall	27.4	27.4	0.7	137.7	238.7	7.7	4.4
	90	104g	South Wall	26.4	26.4	0.7	137.9	253.4	6.8	3.9
	91	104g	South Wall	29.6	27.0	0.8	137.0	261.5	6.5	4.2
	92	104g	South Wall	28.5	28.5	0.7	140.4	247.2	7.7	4.3
	93	104g	South Wall	28.5	28.5	0.7	137.4	236.2	8.0	4.4
	94	104g	South Wall	28.0	28.0	0.7	137.5	229.2	7.5	4.1
	95	104g	South Wall	27.1	26.6	0.7	137.6	240.2	6.7	4.1
	96	104g	South Wall	29.0	29.0	0.7	137.7	238.4	7.4	4.0
	97	104g	South Wall	31.0	31.0	0.7	137.5	215.0	7.1	4.1
	98	104g	South Wall	31.2	20.8	1.4	187.0	253.1	12.3	4.5
	99	104g	South Wall	29.5	29.5	0.7	137.8	200.6	7.0	4.0
	100	104g	South Wall	26.1	25.6	0.8	138.8	253.0	6.5	4.1
Mean				29.3	28.2	0.7	140.5	239.9	7.4	4.2
SD				2.1	3.0	0.1	12.3	15.7	1.0	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-13. Test 5 East wall pressure-time values for sheep nos. 825 and 826

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/26/97	1	104g	East Wall	18.6	3.5	0.8	223.2	354.7	5.3	7.2
	2	104g	East Wall	17.1	3.2	2.5	291.2	423.9	18.7	6.8
	3	104g	East Wall	16.5	2.8	2.9	291.5	430.2	19.2	6.8
	4	104g	East Wall	19.4	10.7	2.6	268.3	365.3	18.8	6.9
	5	104g	East Wall	18.2	3.6	2.7	291.4	467.0	17.7	6.3
	6	104g	East Wall	19.1	3.2	1.0	212.4	352.2	5.7	6.4
	7	104g	East Wall	16.8	2.6	2.0	291.3	411.9	16.2	6.4
	8	104g	East Wall	18.6	3.2	2.1	290.4	400.6	15.0	6.3
	9	104g	East Wall	19.0	6.2	0.8	169.9	353.0	5.4	6.9
	10	104g	East Wall	17.0	7.3	0.8	240.7	301.0	6.7	6.5
	11	104g	East Wall	18.8	2.9	2.5	277.6	408.9	18.2	6.6
	12	104g	East Wall	16.9	6.8	2.9	291.3	422.6	18.9	6.7
	13	104g	East Wall	17.8	3.5	2.4	291.0	422.7	18.7	6.8
	14	104g	East Wall	18.0	6.2	0.8	214.1	318.4	6.9	7.0
	15	104g	East Wall	16.9	2.5	0.8	222.9	316.8	6.0	6.5
	16	104g	East Wall	21.2	3.2	1.3	227.5	388.9	10.9	7.0
	17	104g	East Wall	18.8	3.3	2.6	291.5	420.8	18.8	6.9
	18	104g	East Wall	23.0	7.9	0.4	165.1	231.3	3.1	7.1
	19	104g	East Wall	18.3	2.8	2.5	291.2	422.7	16.4	5.9
	20	104g	East Wall	18.3	3.0	2.1	277.4	424.3	16.3	6.4
	21	104g	East Wall	18.2	7.3	2.3	291.5	404.7	19.0	7.0
	22	104g	East Wall	17.9	3.1	0.9	222.5	352.8	6.3	6.6
	23	104g	East Wall	21.7	3.6	0.5	170.2	253.0	3.6	6.8
	24	104g	East Wall	20.2	4.0	0.8	222.2	296.1	6.5	6.8
	25	104g	East Wall	19.5	3.3	1.4	233.6	353.0	7.1	6.3
	26	104g	East Wall	16.6	9.6	0.8	231.6	337.7	4.8	6.8
	27	104g	East Wall	20.9	6.8	1.2	238.3	297.0	9.8	6.9
	28	104g	East Wall	17.4	3.7	2.4	291.4	439.4	17.8	6.5
	29	104g	East Wall	16.5	2.5	2.5	290.9	365.4	17.7	6.4
	30	104g	East Wall	17.0	3.2	2.5	291.2	381.9	15.8	5.8
	31	104g	East Wall	16.8	3.0	0.9	231.3	352.2	5.8	6.3
	32	104g	East Wall	20.9	3.2	0.6	170.1	293.9	4.0	7.4
	33	104g	East Wall	17.4	2.7	2.2	248.6	381.7	15.4	6.1
	34	104g	East Wall	17.0	4.2	2.7	291.2	408.7	16.2	5.9
	35	104g	East Wall	21.5	3.4	2.1	255.0	349.1	15.6	6.0
	36	104g	East Wall	19.2	3.5	2.7	290.2	365.7	14.9	6.1
	37	104g	East Wall	17.2	2.8	2.5	291.1	453.3	17.3	6.3
	38	104g	East Wall	20.7	3.3	2.6	289.6	403.9	19.3	7.0
	39	104g	East Wall	19.1	3.0	2.6	289.6	452.6	18.4	6.7
	40	104g	East Wall	18.1	2.7	0.8	228.2	299.2	4.6	7.2
	41	104g	East Wall	22.7	5.8	0.9	167.7	293.9	7.3	6.8
	42	104g	East Wall	17.7	3.8	2.7	290.2	410.7	15.2	5.6
	43	104g	East Wall	23.6	9.3	0.6	168.2	255.5	3.8	7.2
	44	104g	East Wall	20.8	3.1	2.4	236.3	351.9	15.9	6.1
	45	104g	East Wall	15.3	2.3	2.5	291.1	488.0	17.6	6.5
	46	104g	East Wall	15.7	2.5	0.9	248.0	364.8	6.4	6.5
	47	104g	East Wall	19.7	3.3	0.8	191.2	352.2	7.0	6.9
	48	104g	East Wall	16.6	4.9	2.6	292.3	423.2	16.9	6.2
	49	104g	East Wall	15.9	2.4	0.9	236.4	362.6	5.8	6.3
	50	104g	East Wall	16.7	3.6	2.6	322.8	489.0	18.0	6.5
	51	104g	East Wall	20.3	3.6	0.8	168.4	298.7	6.7	7.2
	52	104g	East Wall	17.4	2.7	1.3	246.7	365.1	6.8	6.7
	53	104g	East Wall	17.2	2.7	0.9	229.3	352.4	6.4	6.4
	54	104g	East Wall	18.9	3.4	1.4	246.3	378.5	8.0	7.2
	55	104g	East Wall	19.0	3.3	1.8	266.6	416.0	16.6	7.1
	56	104g	East Wall	18.5	2.8	1.4	246.4	359.2	7.3	6.4
	57	104g	East Wall	17.5	3.1	2.6	289.8	407.6	18.7	6.8

Table A-13. Test 5 East wall pressure-time values for sheep nos. 825 and 826 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	East Wall	18.0	3.1	2.5	289.5	452.1	17.7	6.4
	59	104g	East Wall	22.4	3.6	0.6	181.1	257.2	3.5	7.4
	60	104g	East Wall	17.0	2.7	2.6	289.4	418.5	19.2	6.9
	61	104g	East Wall	18.3	3.2	2.5	289.8	411.4	19.8	6.9
	62	104g	East Wall	18.9	2.8	0.7	228.5	351.6	4.0	7.1
	63	104g	East Wall	18.3	2.8	2.7	290.3	410.4	18.0	6.5
	64	104g	East Wall	19.0	4.0	2.6	289.1	418.2	18.7	6.8
	65	104g	East Wall	17.7	2.8	0.6	181.2	300.0	4.3	7.3
	66	104g	East Wall	20.4	3.4	2.6	235.4	402.8	19.9	7.1
	67	104g	East Wall	15.6	2.4	2.6	312.2	465.0	17.4	6.5
	68	104g	East Wall	16.6	4.0	3.1	309.5	422.8	19.7	6.8
	69	104g	East Wall	19.2	3.4	1.0	227.3	351.8	6.5	6.5
	70	104g	East Wall	18.5	5.8	2.5	292.3	422.9	17.5	6.3
	71	104g	East Wall	18.7	3.0	2.7	289.1	407.0	18.5	6.6
	72	104g	East Wall	21.3	4.7	2.7	234.7	420.4	18.1	6.7
	73	104g	East Wall	18.1	2.9	2.7	289.3	418.0	17.3	6.3
	74	104g	East Wall	16.5	2.6	2.0	290.5	410.5	15.1	6.0
	75	104g	East Wall	17.3	5.8	2.4	290.6	410.4	17.2	6.6
	76	104g	East Wall	17.4	4.1	1.2	237.8	372.6	8.9	6.2
	77	104g	East Wall	17.7	3.7	1.2	246.3	400.6	7.2	6.7
	78	104g	East Wall	18.3	3.5	2.5	289.4	409.8	18.8	6.9
	79	104g	East Wall	18.8	3.5	1.2	235.7	371.8	11.4	6.6
	80	104g	East Wall	17.4	3.2	0.8	237.6	294.0	6.4	6.7
	81	104g	East Wall	17.8	4.8	1.3	236.8	382.6	6.5	6.6
	82	104g	East Wall	16.4	3.3	2.6	290.2	418.8	16.5	5.9
	83	104g	East Wall	18.1	2.9	0.7	221.7	315.4	6.9	6.8
	84	104g	East Wall	18.4	3.0	0.3	145.8	250.4	2.1	6.4
	85	104g	East Wall	18.0	2.7	2.6	290.2	382.7	17.2	6.2
	86	104g	East Wall	18.9	3.5	1.2	246.1	400.1	11.0	6.7
	87	104g	East Wall	19.1	3.1	3.1	289.1	407.1	18.5	6.4
	88	104g	East Wall	16.6	3.3	0.9	230.3	351.7	6.3	6.7
	89	104g	East Wall	17.4	2.8	1.0	236.4	352.8	6.6	6.5
	90	104g	East Wall	16.9	2.8	2.5	289.9	420.8	16.6	6.4
	91	104g	East Wall	18.3	3.5	0.8	220.7	293.2	6.1	6.6
	92	104g	East Wall	18.5	2.8	1.4	242.2	410.0	10.7	6.8
	93	104g	East Wall	19.1	2.9	2.3	288.6	417.8	18.8	6.9
	94	104g	East Wall	18.4	2.9	2.6	289.2	451.1	18.3	6.6
	95	104g	East Wall	16.2	4.6	2.2	277.9	488.3	17.3	6.5
	96	104g	East Wall	17.6	3.1	2.7	288.8	420.3	17.8	6.6
	97	104g	East Wall	17.4	3.4	2.5	288.7	451.4	17.9	6.6
	98	104g	East Wall	21.1	3.4	0.8	191.0	292.8	6.6	6.5
	99	104g	East Wall	18.2	3.2	1.2	226.4	385.9	7.0	6.3
	100	104g	East Wall	18.1	3.2	2.5	288.8	408.4	17.4	6.5
Mean				18.4	3.8	1.8	254.6	379.5	12.6	6.6
SD				1.7	1.6	0.8	41.4	56.6	5.8	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-14. Test 6 North wall pressure-time values for sheep nos. 827 and 828

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/28/97	1	104g	North Wall	31.2	23.0	0.9	111.6	180.6	6.4	3.3
	2	104g	North Wall	24.6	20.0	0.8	109.6	194.2	5.6	2.8
	3	104g	North Wall	33.2	21.1	0.7	111.1	157.9	6.5	3.0
	4	104g	North Wall	31.1	21.8	1.0	137.6	215.7	5.7	3.2
	5	104g	North Wall	26.4	24.2	0.8	110.9	180.2	6.6	3.4
	6	104g	North Wall	31.0	22.7	0.7	88.0	193.9	6.3	3.1
	7	104g	North Wall	28.2	20.5	0.8	111.0	194.1	6.1	2.9
	8	104g	North Wall	27.8	5.4	0.8	88.7	238.8	5.8	3.3
	9	104g	North Wall	38.1	22.9	0.8	105.9	166.7	7.2	3.5
	10	104g	North Wall	27.2	20.7	0.8	92.3	185.4	5.8	2.8
	11	104g	North Wall	33.6	22.2	0.9	87.9	181.2	5.9	2.9
	12	104g	North Wall	35.7	22.0	0.9	101.4	189.2	6.8	3.4
	13	104g	North Wall	29.6	19.6	0.8	109.4	180.3	5.9	2.5
	14	104g	North Wall	32.7	22.5	0.8	111.3	180.2	6.9	3.3
	15	104g	North Wall	33.2	5.3	0.8	114.5	184.0	6.8	3.3
	16	104g	North Wall	29.0	22.9	0.7	111.1	233.8	6.2	3.4
	17	104g	North Wall	36.0	22.7	0.9	92.6	185.0	6.1	3.2
	18	104g	North Wall	27.8	24.3	1.1	137.7	238.7	10.6	3.3
	19	104g	North Wall	29.4	22.6	0.8	109.1	232.8	5.9	3.2
	20	104g	North Wall	33.2	23.5	0.9	109.1	180.0	6.0	3.2
	21	104g	North Wall	28.8	21.8	0.8	114.6	221.2	6.6	3.3
	22	104g	North Wall	30.0	21.1	0.8	110.6	217.4	6.0	3.1
	23	104g	North Wall	30.3	22.3	0.7	101.3	182.0	6.2	3.3
	24	104g	North Wall	37.0	7.2	0.8	92.4	185.2	5.9	3.0
	25	104g	North Wall	29.2	22.7	0.7	111.1	228.3	6.4	3.4
	26	104g	North Wall	28.4	24.7	1.2	153.5	233.8	11.3	3.5
	27	104g	North Wall	32.0	20.9	0.8	87.6	185.5	5.9	2.8
	28	104g	North Wall	39.4	21.8	0.7	74.0	148.3	6.5	3.2
	29	104g	North Wall	30.9	4.9	0.7	114.6	219.6	5.3	3.1
	30	104g	North Wall	30.1	19.9	0.8	115.9	180.3	5.5	2.7
	31	104g	North Wall	25.3	23.8	1.1	154.7	259.7	10.7	3.1
	32	104g	North Wall	31.9	22.5	0.8	109.0	179.9	5.9	3.2
	33	104g	North Wall	36.7	22.7	0.7	83.6	179.8	6.4	3.3
	34	104g	North Wall	36.3	21.0	0.8	83.4	183.1	6.2	3.0
	35	104g	North Wall	34.2	22.7	0.7	83.4	184.9	6.6	3.3
	36	104g	North Wall	26.8	20.8	0.7	87.8	180.6	5.6	2.7
	37	104g	North Wall	33.0	23.5	0.9	101.3	217.2	6.3	3.2
	38	104g	North Wall	41.4	21.0	0.8	83.4	179.9	6.3	2.9
	39	104g	North Wall	36.3	21.2	0.7	87.8	162.0	6.1	3.0
	40	104g	North Wall	31.7	20.9	0.8	111.1	193.7	6.0	3.1
	41	104g	North Wall	34.9	21.9	0.8	83.4	179.8	6.3	3.2
	42	104g	North Wall	33.9	23.3	0.7	87.6	157.5	5.9	3.0
	43	104g	North Wall	31.5	23.2	0.6	87.6	182.7	5.7	3.2
	44	104g	North Wall	33.7	22.7	0.9	109.0	216.8	5.8	3.0
	45	104g	North Wall	38.8	22.3	0.8	83.5	179.9	5.9	2.9
	46	104g	North Wall	32.3	22.0	0.6	109.0	237.0	6.6	3.4
	47	104g	North Wall	33.5	22.1	0.9	108.9	179.7	6.2	3.3
	48	104g	North Wall	31.3	25.1	0.9	141.6	183.9	6.3	3.2
	49	104g	North Wall	32.1	22.9	0.8	101.3	223.2	5.5	3.0
	50	104g	North Wall	33.1	23.2	0.7	110.9	192.8	6.0	3.1
	51	104g	North Wall	36.4	22.5	0.9	87.8	184.0	5.5	3.1
	52	104g	North Wall	35.0	23.2	0.8	87.6	179.7	6.1	3.1
	53	104g	North Wall	23.2	20.2	0.7	137.7	234.7	4.8	3.0
	54	104g	North Wall	33.2	22.1	0.6	110.4	182.4	6.5	3.3
	55	104g	North Wall	36.1	22.8	0.8	108.7	154.4	6.3	3.4
	56	104g	North Wall	35.3	22.3	0.7	87.7	166.8	6.2	3.1
	57	104g	North Wall	27.3	18.7	0.6	114.6	186.6	5.0	2.9

Table A-14. Test 6 North wall pressure-time values for sheep nos. 827 and 828 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	North Wall	32.9	20.8	0.7	83.4	157.4	6.0	2.8
	59	104g	North Wall	26.9	21.5	0.6	87.5	182.6	5.4	2.8
	60	104g	North Wall	33.0	21.1	0.8	110.9	192.5	6.5	3.3
	61	104g	North Wall	28.1	21.0	0.6	86.6	189.8	4.9	2.8
	62	104g	North Wall	29.3	23.7	0.8	118.8	181.1	5.4	2.9
	63	104g	North Wall	31.8	21.9	0.9	113.2	183.8	6.0	3.0
	64	104g	North Wall	33.1	23.4	0.8	110.8	193.3	6.3	3.4
	65	104g	North Wall	25.9	22.1	0.6	111.0	216.8	5.5	3.4
	66	104g	North Wall	34.5	20.7	0.8	101.1	157.1	5.6	3.0
	67	104g	North Wall	34.0	21.4	0.7	87.6	179.6	6.0	3.2
	68	104g	North Wall	32.2	20.8	0.8	108.9	182.4	5.6	3.0
	69	104g	North Wall	33.8	20.6	0.8	87.6	180.0	5.9	2.7
	70	104g	North Wall	27.9	19.7	0.6	82.5	179.6	5.3	2.8
	71	104g	North Wall	30.8	21.6	0.7	111.0	179.6	6.1	3.3
	72	104g	North Wall	31.3	21.6	0.8	110.3	216.8	6.2	3.1
	73	104g	North Wall	31.1	22.1	0.7	110.7	179.6	6.4	3.2
	74	104g	North Wall	34.6	22.9	0.7	83.2	189.6	6.5	3.2
	75	104g	North Wall	35.4	20.2	0.8	86.0	157.3	5.7	2.7
	76	104g	North Wall	27.8	24.0	1.1	137.2	233.0	10.8	3.2
	77	104g	North Wall	31.5	21.7	0.8	115.2	196.8	5.7	3.1
	78	104g	North Wall	29.3	23.2	0.8	109.0	216.8	5.9	3.1
	79	104g	North Wall	27.7	23.1	0.8	137.1	216.4	6.2	3.4
	80	104g	North Wall	29.0	20.8	1.0	110.4	232.2	5.2	2.7
	81	104g	North Wall	41.3	22.7	0.8	60.4	156.4	5.7	3.1
	82	104g	North Wall	27.2	22.3	1.1	143.3	232.7	9.9	3.3
	83	104g	North Wall	36.6	21.0	0.9	108.8	189.4	6.6	3.2
	84	104g	North Wall	36.1	23.8	0.7	87.4	162.2	6.5	3.5
	85	104g	North Wall	29.4	22.6	0.9	115.4	197.6	5.8	2.9
	86	104g	North Wall	36.0	21.1	0.9	87.6	179.5	5.8	3.0
	87	104g	North Wall	37.4	20.3	0.6	87.5	175.7	5.7	2.9
	88	104g	North Wall	29.1	23.5	0.8	136.8	234.8	6.2	3.4
	89	104g	North Wall	31.8	22.5	0.7	110.3	200.0	6.5	3.3
	90	104g	North Wall	30.7	23.3	0.9	108.8	192.0	6.1	3.0
	91	104g	North Wall	33.5	23.0	0.8	108.6	179.2	6.2	3.2
	92	104g	North Wall	28.3	22.0	0.8	108.5	216.6	6.3	3.3
	93	104g	North Wall	32.0	22.3	0.7	110.6	179.4	6.0	3.2
	94	104g	North Wall	31.9	23.1	0.8	87.3	181.2	5.6	2.9
	95	104g	North Wall	33.1	22.8	0.7	108.8	179.4	6.1	3.3
	96	104g	North Wall	35.7	22.1	0.8	101.0	186.0	6.2	3.1
	97	104g	North Wall	36.0	21.3	0.8	91.4	192.4	5.8	3.2
	98	104g	North Wall	36.2	24.9	0.8	108.2	178.8	7.0	3.5
	99	104g	North Wall	30.1	21.6	0.7	87.5	216.2	6.4	3.3
	100	104g	North Wall	34.8	21.7	0.8	101.0	180.7	5.7	3.0
Mean				32.1	21.4	0.8	104.2	192.5	6.3	3.1
SD				3.6	3.5	0.1	17.5	23.4	1.1	0.2

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-15. Test 6 South wall pressure-time values for sheep nos. 827 and 828

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/28/97	1	104g	South Wall	31.7	31.7	0.7	137.3	236.3	7.8	4.2
	2	104g	South Wall	28.2	28.2	0.6	138.4	230.1	6.6	4.0
	3	104g	South Wall	29.1	29.1	0.7	138.2	202.3	7.0	4.0
	4	104g	South Wall	30.0	30.0	0.7	124.3	234.9	7.8	4.3
	5	104g	South Wall	30.7	30.7	0.8	153.4	244.0	8.0	4.6
	6	104g	South Wall	28.8	28.8	0.7	137.4	233.1	7.4	4.0
	7	104g	South Wall	26.9	26.9	0.7	138.3	233.8	6.8	4.1
	8	104g	South Wall	27.7	5.5	0.8	159.7	301.4	7.6	4.6
	9	104g	South Wall	30.6	30.6	0.7	88.2	234.7	7.8	4.3
	10	104g	South Wall	29.3	28.7	0.8	145.4	251.8	5.9	4.2
	11	104g	South Wall	29.5	29.5	0.7	137.9	243.6	7.1	4.0
	12	104g	South Wall	32.7	32.7	0.7	138.2	229.5	7.9	4.4
	13	104g	South Wall	26.6	26.6	0.7	153.6	229.6	6.6	3.9
	14	104g	South Wall	30.1	30.1	0.7	117.5	234.8	7.8	4.3
	15	104g	South Wall	31.5	5.4	0.8	157.5	213.4	7.7	4.2
	16	104g	South Wall	29.5	29.5	0.7	138.2	230.7	7.6	4.4
	17	104g	South Wall	28.1	4.3	0.8	158.3	248.6	6.4	4.2
	18	104g	South Wall	29.4	29.4	0.7	154.5	239.8	7.9	4.5
	19	104g	South Wall	26.8	26.7	1.7	195.5	297.3	13.7	4.3
	20	104g	South Wall	29.7	29.1	0.8	142.8	233.7	7.0	4.5
	21	104g	South Wall	34.3	30.3	0.8	117.8	236.7	8.2	4.7
	22	104g	South Wall	29.8	29.8	0.7	138.3	232.8	7.4	4.0
	23	104g	South Wall	28.2	28.2	0.6	138.9	234.9	7.4	4.3
	24	104g	South Wall	26.2	6.6	0.7	158.5	239.0	7.1	4.0
	25	104g	South Wall	29.1	29.1	0.7	155.6	229.2	7.5	4.4
	26	104g	South Wall	30.2	27.6	1.7	156.0	234.7	14.1	4.7
	27	104g	South Wall	29.8	29.8	0.7	118.0	239.7	7.0	4.1
	28	104g	South Wall	31.6	31.6	0.7	137.6	229.3	7.5	4.1
	29	104g	South Wall	29.7	5.1	0.8	154.3	237.1	7.0	4.2
	30	104g	South Wall	25.3	25.3	0.6	142.8	233.6	6.6	3.7
	31	104g	South Wall	30.1	30.1	0.7	137.9	232.7	7.8	4.7
	32	104g	South Wall	28.8	28.8	0.7	138.0	234.4	7.3	4.2
	33	104g	South Wall	29.7	28.0	1.6	160.2	232.1	13.4	4.1
	34	104g	South Wall	29.6	29.6	0.6	155.5	195.4	7.0	4.1
	35	104g	South Wall	28.3	28.3	0.7	137.9	239.5	7.7	4.3
	36	104g	South Wall	25.0	25.0	0.6	138.0	262.5	6.7	3.9
	37	104g	South Wall	30.7	28.7	0.8	155.2	260.9	6.9	4.4
	38	104g	South Wall	32.9	30.1	0.8	136.8	243.7	6.3	4.1
	39	104g	South Wall	26.9	26.9	0.7	137.9	235.5	7.0	4.1
	40	104g	South Wall	26.8	26.8	0.7	139.3	229.5	7.2	4.2
	41	104g	South Wall	30.4	27.1	0.8	138.0	232.1	7.3	4.3
	42	104g	South Wall	28.6	28.6	0.7	161.9	234.6	7.4	4.2
	43	104g	South Wall	33.7	28.7	0.8	104.2	201.5	7.2	4.2
	44	104g	South Wall	30.3	28.0	0.8	137.8	234.1	6.9	4.2
	45	104g	South Wall	28.5	28.5	0.7	138.9	229.1	7.3	4.1
	46	104g	South Wall	28.0	28.0	0.6	138.1	232.5	7.6	4.3
	47	104g	South Wall	28.9	28.9	0.7	153.3	232.6	7.5	4.2
	48	104g	South Wall	30.2	30.1	0.7	142.5	237.7	7.2	4.5
	49	104g	South Wall	33.1	27.6	0.8	137.9	233.3	6.6	4.1
	50	104g	South Wall	28.1	27.9	0.8	173.6	236.1	6.8	4.2
	51	104g	South Wall	26.3	26.3	0.7	155.9	271.1	7.5	4.1
	52	104g	South Wall	27.2	27.2	0.7	155.7	234.6	7.7	4.2
	53	104g	South Wall	27.1	27.1	0.7	162.1	236.3	7.2	4.1
	54	104g	South Wall	30.9	30.9	0.7	123.9	234.3	7.5	4.1
	55	104g	South Wall	29.1	29.1	0.7	137.8	234.0	7.4	4.3
	56	104g	South Wall	31.6	31.6	0.6	145.8	228.6	7.2	4.1
	57	104g	South Wall	23.9	3.5	0.7	143.4	237.5	6.5	3.7

Table A-15. Test 6 South wall pressure-time values for sheep nos. 827 and 828 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	South Wall	26.3	26.3	0.7	138.0	284.5	6.7	4.0
	59	104g	South Wall	27.0	27.0	0.6	153.1	233.5	6.9	4.2
	60	104g	South Wall	27.5	27.5	0.7	142.1	282.9	7.5	4.1
	61	104g	South Wall	26.5	26.5	0.7	139.0	233.2	6.9	3.9
	62	104g	South Wall	29.2	29.2	0.7	117.6	233.1	7.4	4.2
	63	104g	South Wall	29.5	4.5	0.7	142.1	249.6	7.2	4.0
	64	104g	South Wall	33.1	33.1	0.7	142.2	228.7	7.8	4.2
	65	104g	South Wall	31.1	25.6	1.6	180.6	282.8	13.7	4.7
	66	104g	South Wall	29.7	29.7	0.7	138.1	233.0	7.0	4.1
	67	104g	South Wall	30.3	30.3	0.7	136.4	214.3	7.2	4.0
	68	104g	South Wall	29.7	29.7	0.6	137.9	232.4	7.0	4.0
	69	104g	South Wall	27.7	27.7	0.7	138.5	260.7	6.5	3.9
	70	104g	South Wall	27.1	27.1	0.7	137.9	276.1	6.7	3.8
	71	104g	South Wall	30.9	30.9	0.7	124.0	233.9	7.5	4.2
	72	104g	South Wall	27.6	27.6	0.7	155.5	266.2	7.7	4.4
	73	104g	South Wall	30.1	30.1	0.7	139.1	233.0	7.6	4.2
	74	104g	South Wall	31.8	31.8	0.7	117.6	197.1	7.4	4.1
	75	104g	South Wall	27.5	27.5	0.7	137.7	246.6	6.6	3.8
	76	104g	South Wall	31.5	29.0	0.8	137.7	245.3	7.9	4.9
	77	104g	South Wall	29.5	29.5	0.7	142.8	237.2	7.3	3.9
	78	104g	South Wall	26.1	26.1	0.7	161.4	276.1	7.4	4.3
	79	104g	South Wall	31.8	31.8	0.8	139.0	235.6	7.8	4.3
	80	104g	South Wall	26.6	25.9	0.7	155.0	233.1	5.9	3.8
	81	104g	South Wall	27.6	27.6	0.7	142.2	261.5	7.1	4.0
	82	104g	South Wall	28.9	28.9	0.7	154.9	231.9	7.5	4.2
	83	104g	South Wall	32.1	27.5	0.9	137.9	232.1	6.1	4.1
	84	104g	South Wall	30.7	30.7	0.7	102.1	228.4	7.9	4.3
	85	104g	South Wall	27.5	27.5	0.7	142.8	238.1	7.2	4.1
	86	104g	South Wall	30.1	30.1	0.6	139.0	232.2	7.1	3.8
	87	104g	South Wall	26.1	26.1	0.7	137.5	231.7	6.8	3.8
	88	104g	South Wall	32.3	32.3	0.7	137.8	231.3	7.8	4.3
	89	104g	South Wall	31.2	31.2	0.7	117.6	235.5	7.5	4.1
	90	104g	South Wall	29.8	26.8	0.8	153.9	242.9	6.9	4.2
	91	104g	South Wall	34.6	28.0	0.8	138.8	231.9	7.3	4.2
	92	104g	South Wall	28.3	28.3	0.7	154.9	269.9	7.8	4.1
	93	104g	South Wall	30.9	30.9	0.7	123.6	232.0	7.4	4.0
	94	104g	South Wall	29.3	29.3	0.7	141.8	233.5	7.5	4.4
	95	104g	South Wall	28.5	28.5	0.7	152.9	228.4	7.5	4.1
	96	104g	South Wall	32.0	32.0	0.7	123.7	232.3	7.4	4.3
	97	104g	South Wall	30.8	30.8	0.7	121.6	232.7	7.2	4.1
	98	104g	South Wall	35.2	35.2	0.7	123.4	227.9	8.5	5.0
	99	104g	South Wall	28.3	28.3	0.7	137.8	261.2	7.6	4.3
	100	104g	South Wall	30.7	28.6	0.8	152.5	232.2	6.5	4.2
Mean				29.4	27.2	0.7	141.5	238.9	7.5	4.2
SD				2.2	6.4	0.2	15.4	18.0	1.4	0.2

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-16. Test 6 East wall pressure-time values for sheep nos. 827 and 828

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Td, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
8/28/97	1	104g	East Wall	20.5	3.1	0.9	211.5	300.5	7.2	7.0
	2	104g	East Wall	18.0	3.5	1.7	278.0	361.0	13.3	5.9
	3	104g	East Wall	16.9	2.7	2.6	290.4	430.4	18.5	6.6
	4	104g	East Wall	18.1	3.6	0.9	227.4	354.4	6.3	7.2
	5	104g	East Wall	20.2	3.0	0.6	221.7	299.5	4.8	6.9
	6	104g	East Wall	22.0	3.9	0.9	214.1	299.8	7.1	6.7
	7	104g	East Wall	19.0	3.5	2.7	291.0	380.0	18.2	6.4
	8	104g	East Wall	18.4	7.5	2.3	246.1	395.2	18.1	6.8
	9	104g	East Wall	19.5	6.4	0.8	215.4	303.1	6.9	7.3
	10	104g	East Wall	19.0	4.5	2.1	279.9	383.1	15.9	6.2
	11	104g	East Wall	17.3	3.5	0.9	236.3	354.9	5.7	6.5
	12	104g	East Wall	19.6	3.9	2.2	243.0	381.6	19.5	7.2
	13	104g	East Wall	19.0	3.1	2.6	290.4	381.8	17.1	6.2
	14	104g	East Wall	19.1	3.6	2.5	277.2	388.8	18.8	7.1
	15	104g	East Wall	18.5	7.5	2.2	245.0	373.8	18.6	7.0
	16	104g	East Wall	18.3	3.8	2.3	277.2	398.0	19.3	6.9
	17	104g	East Wall	17.2	7.0	2.3	295.7	382.2	18.6	6.6
	18	104g	East Wall	18.2	3.0	2.3	297.9	381.0	19.1	6.9
	19	104g	East Wall	20.7	3.8	0.2	135.4	257.8	2.1	6.9
	20	104g	East Wall	18.2	2.8	1.0	227.6	373.2	6.8	6.5
	21	104g	East Wall	18.8	6.3	2.3	291.4	385.2	18.9	6.8
	22	104g	East Wall	17.0	3.2	1.0	229.4	373.2	6.5	6.5
	23	104g	East Wall	20.2	3.2	0.7	209.9	299.7	6.0	6.9
	24	104g	East Wall	16.7	10.4	2.4	296.0	424.2	17.7	6.3
	25	104g	East Wall	19.9	3.3	2.3	290.5	370.0	18.9	6.9
	26	104g	East Wall	23.1	4.0	1.1	217.7	301.2	8.7	7.5
	27	104g	East Wall	17.7	2.7	2.1	280.8	390.8	17.1	6.2
	28	104g	East Wall	17.7	3.2	2.6	292.8	422.4	18.8	6.8
	29	104g	East Wall	19.5	6.8	1.1	212.0	354.3	6.6	6.7
	30	104g	East Wall	17.7	2.8	2.2	293.2	397.8	15.4	5.9
	31	104g	East Wall	22.2	3.6	1.0	221.3	298.9	7.2	6.9
	32	104g	East Wall	18.1	3.1	2.3	277.0	395.6	17.2	6.6
	33	104g	East Wall	17.4	3.2	2.6	289.5	452.5	18.9	6.7
	34	104g	East Wall	16.9	3.2	1.3	246.8	383.3	9.4	6.5
	35	104g	East Wall	16.6	4.0	2.2	295.5	424.6	19.1	6.9
	36	104g	East Wall	16.3	3.1	2.5	290.0	422.6	16.5	6.0
	37	104g	East Wall	16.8	3.7	2.2	292.4	404.1	19.3	7.2
	38	104g	East Wall	16.8	3.4	1.8	277.1	422.2	15.7	6.5
	39	104g	East Wall	18.4	2.8	1.7	242.9	404.3	14.5	6.2
	40	104g	East Wall	16.3	2.9	2.6	289.8	466.0	18.1	6.5
	41	104g	East Wall	18.1	3.2	0.8	227.3	355.0	4.8	6.7
	42	104g	East Wall	16.7	2.5	2.5	292.6	421.6	17.2	6.4
	43	104g	East Wall	17.4	3.2	0.9	235.3	354.3	6.5	6.7
	44	104g	East Wall	17.7	3.2	2.4	292.3	421.5	18.5	6.8
	45	104g	East Wall	20.9	3.2	1.5	242.6	352.9	7.9	6.5
	46	104g	East Wall	20.0	3.6	2.2	283.4	381.0	19.2	6.8
	47	104g	East Wall	17.1	3.4	0.9	235.4	372.8	6.5	6.8
	48	104g	East Wall	22.3	6.0	0.8	192.5	294.7	7.0	6.8
	49	104g	East Wall	21.1	3.1	2.8	269.0	395.2	15.5	6.6
	50	104g	East Wall	19.4	3.6	0.7	226.5	300.4	4.6	7.0
	51	104g	East Wall	19.2	4.4	0.9	211.7	301.8	5.8	6.6
	52	104g	East Wall	17.9	3.3	0.7	219.5	303.0	5.9	6.7
	53	104g	East Wall	17.0	3.0	1.0	211.2	382.8	6.6	6.3
	54	104g	East Wall	17.7	3.4	2.6	307.6	395.3	18.9	6.7
	55	104g	East Wall	18.3	4.1	1.1	219.3	356.1	7.0	6.9
	56	104g	East Wall	16.8	3.2	2.4	276.6	382.5	17.3	6.5
	57	104g	East Wall	16.0	5.1	2.6	294.6	397.4	16.3	5.8

Table A-16. Test 6 East wall pressure-time values for sheep nos. 827 and 828 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	East Wall	16.4	2.7	2.4	276.9	421.4	16.6	6.0
	59	104g	East Wall	21.3	3.4	0.2	134.6	226.3	2.1	6.0
	60	104g	East Wall	19.2	3.4	2.5	289.2	394.9	18.6	6.7
	61	104g	East Wall	16.9	3.1	0.8	210.7	364.7	5.6	6.0
	62	104g	East Wall	16.5	3.4	2.2	276.6	421.0	16.9	6.3
	63	104g	East Wall	17.3	6.2	2.2	309.5	422.3	17.2	6.6
	64	104g	East Wall	17.9	3.1	2.3	289.6	394.6	18.6	6.8
	65	104g	East Wall	21.0	3.1	1.0	220.9	298.5	7.4	6.5
	66	104g	East Wall	18.2	3.8	2.3	276.6	421.3	17.0	6.2
	67	104g	East Wall	17.8	3.1	2.7	292.0	420.8	18.5	6.5
	68	104g	East Wall	17.8	3.1	2.1	291.9	356.0	16.6	6.5
	69	104g	East Wall	16.5	3.3	2.1	276.6	421.1	15.0	5.8
	70	104g	East Wall	17.4	3.0	2.2	276.7	382.5	16.2	6.1
	71	104g	East Wall	18.4	2.9	2.3	276.4	381.9	18.3	6.9
	72	104g	East Wall	18.0	2.8	1.3	246.0	387.3	6.5	6.6
	73	104g	East Wall	17.7	3.4	0.8	211.6	352.9	4.1	6.7
	74	104g	East Wall	18.0	3.6	0.7	220.8	330.1	4.4	6.6
	75	104g	East Wall	21.0	3.2	2.0	223.1	348.0	15.7	5.9
	76	104g	East Wall	19.5	3.0	0.3	143.4	248.7	2.3	7.1
	77	104g	East Wall	16.3	5.8	2.2	292.0	422.2	17.1	6.4
	78	104g	East Wall	16.0	3.2	2.1	292.0	451.5	15.7	6.2
	79	104g	East Wall	17.9	2.7	2.3	291.6	379.7	18.9	6.9
	80	104g	East Wall	17.4	2.9	2.2	276.4	398.3	15.4	6.0
	81	104g	East Wall	17.4	3.6	2.2	291.9	378.8	17.0	6.4
	82	104g	East Wall	16.8	3.4	2.2	291.6	381.9	18.4	6.9
	83	104g	East Wall	17.9	2.7	2.2	276.1	450.9	16.0	6.4
	84	104g	East Wall	18.8	3.6	0.8	220.3	341.0	4.3	7.1
	85	104g	East Wall	17.7	8.3	0.8	229.8	301.7	5.8	6.4
	86	104g	East Wall	17.0	2.6	2.4	289.1	394.8	17.3	6.3
	87	104g	East Wall	16.3	2.5	2.1	289.0	421.0	15.5	6.1
	88	104g	East Wall	20.0	11.5	0.6	170.0	297.8	4.3	7.0
	89	104g	East Wall	17.8	2.7	2.3	291.5	394.0	18.3	6.6
	90	104g	East Wall	18.5	2.8	2.2	242.0	392.2	17.8	6.4
	91	104g	East Wall	17.4	3.7	2.2	291.4	394.0	18.6	6.7
	92	104g	East Wall	16.5	3.3	2.2	291.4	379.3	17.9	6.7
	93	104g	East Wall	16.7	3.3	1.3	245.8	396.4	9.8	6.7
	94	104g	East Wall	19.2	3.0	2.7	237.6	386.9	18.9	6.8
	95	104g	East Wall	18.6	3.0	2.1	242.0	382.7	17.5	6.6
	96	104g	East Wall	20.9	5.5	1.4	228.0	298.8	7.5	6.6
	97	104g	East Wall	17.2	6.7	0.9	222.7	357.4	6.7	6.6
	98	104g	East Wall	20.8	3.9	1.3	240.0	347.9	11.5	7.8
	99	104g	East Wall	17.8	2.8	0.3	167.7	272.7	2.3	6.6
	100	104g	East Wall	18.5	3.8	2.0	291.4	419.8	16.3	6.6
Mean				18.3	3.9	1.7	255.2	371.8	13.0	6.6
SD				1.6	1.6	0.7	39.7	48.1	5.8	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-17. Test 7 North wall pressure-time values for sheep nos. 829 and 830

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/2/97	1	104g	North Wall	30.6	21.6	0.6	88.1	195.9	4.9	3.0
	2	104g	North Wall	26.8	20.6	0.8	114.8	197.5	5.4	2.8
	3	104g	North Wall	28.8	20.6	0.8	110.9	228.3	5.7	2.9
	4	104g	North Wall	33.8	22.3	0.9	111.1	155.8	5.9	3.1
	5	104g	North Wall	20.9	18.6	1.2	190.3	256.0	7.9	2.5
	6	104g	North Wall	27.8	21.0	0.5	66.1	182.7	4.5	2.7
	7	104g	North Wall	27.9	20.8	0.8	114.6	180.2	5.7	2.9
	8	104g	North Wall	22.4	20.3	0.8	157.7	234.4	5.5	2.8
	9	104g	North Wall	33.6	22.5	0.9	99.1	154.9	6.1	3.0
	10	104g	North Wall	32.7	21.0	0.9	101.3	180.1	6.0	2.8
	11	104g	North Wall	26.6	19.6	0.7	101.2	190.4	4.7	2.7
	12	104g	North Wall	26.7	6.4	0.7	130.8	197.0	4.9	2.8
	13	104g	North Wall	33.8	20.9	0.6	78.0	155.9	5.4	2.9
	14	104g	North Wall	28.8	21.4	0.9	664.8	664.8	5.7	8.8
	15	104g	North Wall	38.9	21.4	672.7	638.2	772.0	3111.3	12.7
	16	104g	North Wall	35.3	20.4	0.8	110.8	182.7	5.8	10.8
	17	104g	North Wall	24.3	20.4	0.7	119.1	192.6	5.3	2.6
	18	104g	North Wall	37.4	21.3	0.8	87.8	154.9	6.4	3.3
	19	104g	North Wall	23.7	19.7	0.7	121.6	197.7	5.0	2.5
	20	104g	North Wall	25.2	20.4	0.7	119.0	193.7	5.1	2.7
	21	104g	North Wall	33.9	20.5	0.6	74.4	143.6	5.3	2.9
	22	104g	North Wall	28.6	20.3	0.7	113.1	220.1	5.5	2.8
	23	104g	North Wall	28.0	21.6	0.9	137.5	233.4	5.8	3.0
	24	104g	North Wall	27.7	20.0	0.8	110.8	193.8	5.6	2.7
	25	104g	North Wall	30.8	23.2	0.8	87.8	233.4	5.9	3.2
	26	104g	North Wall	30.5	21.1	0.8	181.6	667.8	5.6	3.4
	27	104g	North Wall	29.8	20.8	0.8	668.9	668.9	5.7	12.6
	28	104g	North Wall	29.0	20.7	0.8	119.0	192.4	5.8	6.1
	29	104g	North Wall	31.1	20.5	0.9	225.3	668.9	5.8	2.8
	30	104g	North Wall	26.4	20.5	0.7	87.9	192.4	5.3	2.8
	31	104g	North Wall	26.7	20.5	0.7	119.0	209.4	5.5	2.7
	32	104g	North Wall	30.5	20.8	0.8	118.9	214.8	5.5	2.7
	33	104g	North Wall	38.8	21.1	0.9	78.0	161.9	5.9	2.9
	34	104g	North Wall	40.8	22.5	0.8	51.9	155.6	5.8	3.1
	35	104g	North Wall	32.5	21.4	0.8	87.6	182.4	5.7	3.1
	36	104g	North Wall	27.1	20.3	0.6	87.9	216.0	5.2	2.9
	37	104g	North Wall	24.2	20.5	0.8	117.2	193.6	5.7	2.7
	38	104g	North Wall	21.5	19.7	0.7	157.5	232.8	5.3	2.7
	39	104g	North Wall	30.2	21.3	1.0	109.1	232.4	5.7	3.0
	40	104g	North Wall	27.6	20.5	0.8	110.8	192.7	5.3	2.8
	41	104g	North Wall	19.1	18.8	0.8	143.2	233.3	4.6	2.5
	42	104g	North Wall	27.5	5.1	0.7	93.0	219.6	5.4	2.7
	43	104g	North Wall	33.6	20.3	0.8	87.5	181.1	6.1	2.8
	44	104g	North Wall	24.4	20.6	0.6	88.6	216.8	4.7	2.6
	45	104g	North Wall	28.6	20.7	0.8	87.7	216.9	5.7	2.9
	46	104g	North Wall	36.2	21.0	0.8	100.1	166.1	6.1	2.9
	47	104g	North Wall	29.9	21.2	0.8	110.7	192.8	6.5	3.1
	48	104g	North Wall	28.7	20.1	0.8	114.4	209.1	5.3	2.8
	49	104g	North Wall	30.7	6.4	0.7	92.4	200.1	6.2	3.1
	50	104g	North Wall	32.6	20.2	0.7	87.5	157.5	5.6	2.6
	51	104g	North Wall	26.9	19.9	0.8	92.0	194.6	5.5	2.5
	52	104g	North Wall	22.2	20.9	0.7	154.7	214.5	4.8	2.8
	53	104g	North Wall	24.8	5.2	0.7	102.7	220.1	5.3	2.8
	54	104g	North Wall	24.0	19.7	0.7	92.3	194.3	4.7	2.7
	55	104g	North Wall	32.9	22.6	1.0	121.0	192.5	5.5	3.1
	56	104g	North Wall	29.6	6.9	0.7	92.1	187.3	5.4	2.8
	57	104g	North Wall	26.3	20.0	0.8	664.6	664.6	5.3	12.1

Table A-17. Test 7 North wall pressure-time values for sheep nos. 829 and 830 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	North Wall	21.3	20.2	0.8	390.2	668.9	5.2	2.5
	59	104g	North Wall	29.9	21.3	0.7	110.4	216.9	6.2	3.1
	60	104g	North Wall	33.1	22.3	0.7	110.4	162.4	5.8	3.1
	61	104g	North Wall	26.8	19.5	0.6	87.6	175.8	5.0	2.7
	62	104g	North Wall	32.2	21.1	0.7	87.6	182.4	5.2	2.9
	63	104g	North Wall	24.2	19.8	0.8	122.7	237.5	5.1	2.6
	64	104g	North Wall	24.8	21.4	0.6	138.5	220.1	4.9	2.8
	65	104g	North Wall	28.1	20.9	0.7	87.7	232.9	5.5	2.9
	66	104g	North Wall	31.1	20.6	0.9	110.5	192.4	5.6	2.8
	67	104g	North Wall	30.1	21.9	0.9	137.2	192.6	5.3	3.0
	68	104g	North Wall	27.7	20.4	0.8	136.4	190.9	5.2	2.8
	69	104g	North Wall	27.1	22.9	0.8	87.6	216.3	5.6	2.9
	70	104g	North Wall	25.2	20.4	0.6	92.2	185.9	4.8	2.8
	71	104g	North Wall	29.9	20.3	0.8	87.8	190.7	5.3	2.8
	72	104g	North Wall	32.9	20.8	1.0	136.2	215.5	5.9	3.0
	73	104g	North Wall	24.6	20.0	0.7	120.9	197.3	4.9	2.6
	74	104g	North Wall	32.7	20.0	0.6	87.6	182.2	5.0	2.9
	75	104g	North Wall	27.5	19.7	0.8	109.1	196.9	5.3	2.8
	76	104g	North Wall	29.9	20.5	0.6	87.7	176.0	5.0	2.7
	77	104g	North Wall	31.1	21.3	0.8	87.6	193.3	5.7	3.0
	78	104g	North Wall	26.8	20.8	0.6	87.6	215.6	5.1	2.7
	79	104g	North Wall	33.0	22.6	0.8	87.6	162.3	6.0	3.1
	80	104g	North Wall	32.2	22.0	0.6	60.8	175.4	5.2	2.9
	81	104g	North Wall	30.6	20.4	0.7	87.0	182.7	5.9	2.6
	82	104g	North Wall	32.5	20.3	0.9	110.2	189.3	5.9	2.9
	83	104g	North Wall	26.0	20.2	0.8	137.3	182.6	5.6	2.6
	84	104g	North Wall	26.7	19.3	0.8	116.7	193.3	5.3	2.6
	86	104g	North Wall	28.9	19.9	0.8	118.7	189.6	5.4	2.5
	87	104g	North Wall	29.5	21.2	0.6	87.4	175.6	5.1	2.9
	88	104g	North Wall	32.7	23.0	0.8	113.6	216.8	6.1	3.3
	89	104g	North Wall	26.0	20.1	0.8	135.6	189.6	5.0	2.5
	90	104g	North Wall	32.7	20.5	0.9	87.6	189.6	5.9	2.7
	91	104g	North Wall	27.7	20.5	0.7	87.7	213.8	5.5	3.0
	92	104g	North Wall	20.8	19.0	0.8	155.3	234.2	4.4	2.5
	93	104g	North Wall	27.1	20.5	0.6	100.9	181.6	4.7	2.8
	94	104g	North Wall	30.4	20.6	0.8	110.2	189.5	5.6	2.8
	95	104g	North Wall	23.9	20.5	0.7	87.3	232.0	4.9	2.6
	96	104g	North Wall	31.8	22.0	1.0	110.2	208.3	5.6	2.9
	97	104g	North Wall	31.6	21.7	0.9	108.8	155.1	5.5	3.0
	98	104g	North Wall	32.3	21.5	0.7	87.5	156.2	5.4	2.9
	99	104g	North Wall	27.2	19.1	0.8	118.6	386.3	5.2	2.8
	100	104g	North Wall	23.2	21.4	0.8	152.7	344.9	5.0	2.9
Mean				28.9	20.0	7.6	134.4	234.0	37.2	3.3
SD				4.2	3.4	67.9	115.6	129.7	313.7	2.0

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-18. Test 7 South wall pressure-time values for sheep nos. 829 and 830

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/2/97	1	104g	South Wall	26.0	26.0	0.7	138.2	240.2	7.2	3.9
	2	104g	South Wall	29.1	29.1	0.7	141.6	238.7	6.8	3.9
	3	104g	South Wall	28.6	28.6	0.7	138.8	229.8	7.2	3.9
	4	104g	South Wall	27.4	27.4	0.7	137.8	234.7	7.6	4.2
	5	104g	South Wall	24.8	24.8	0.8	154.8	283.7	6.2	3.4
	6	104g	South Wall	24.2	24.2	0.8	155.8	283.8	6.1	3.8
	7	104g	South Wall	27.4	27.4	0.7	137.8	254.3	7.1	4.1
	8	104g	South Wall	26.0	26.0	0.7	138.4	204.5	6.8	4.0
	9	104g	South Wall	27.5	26.4	0.8	154.6	255.8	6.8	4.2
	10	104g	South Wall	26.5	26.5	0.6	143.3	234.8	7.3	4.0
	11	104g	South Wall	25.1	25.1	0.7	138.2	254.6	6.5	3.6
	12	104g	South Wall	25.5	5.5	0.7	143.5	259.6	6.6	3.7
	13	104g	South Wall	29.7	26.0	0.8	141.7	240.3	6.7	3.9
	14	104g	South Wall	28.4	26.2	0.8	138.5	261.5	6.4	4.3
	15	104g	South Wall	17.6	15.2	0.7	164.4	304.0	4.4	2.5
	16	104g	South Wall	28.0	28.0	0.7	138.4	234.9	6.9	4.0
	17	104g	South Wall	26.1	26.1	0.7	138.6	235.1	6.5	3.7
	18	104g	South Wall	29.3	29.3	0.8	138.4	234.9	7.6	4.2
	19	104g	South Wall	24.0	24.0	0.6	143.3	266.8	6.2	3.6
	20	104g	South Wall	27.5	27.5	0.7	138.7	201.9	6.8	3.8
	21	104g	South Wall	26.7	26.7	0.7	138.9	253.9	7.0	4.0
	22	104g	South Wall	25.4	25.4	0.7	157.3	238.8	6.8	4.0
	23	104g	South Wall	31.5	30.4	0.8	117.9	233.5	6.8	4.0
	24	104g	South Wall	25.1	25.1	0.6	153.5	234.6	6.6	3.9
	25	104g	South Wall	32.7	27.1	0.8	136.7	233.9	6.6	4.4
	26	104g	South Wall	29.6	29.6	0.7	137.6	239.6	7.2	4.1
	27	104g	South Wall	26.7	26.7	0.7	138.3	235.3	6.8	4.0
	28	104g	South Wall	24.7	24.7	0.7	138.6	233.4	6.9	3.8
	29	104g	South Wall	27.4	26.5	0.6	141.2	246.5	5.6	4.0
	30	104g	South Wall	29.6	24.3	0.8	137.6	201.7	5.4	3.8
	31	104g	South Wall	26.2	26.2	0.7	137.6	235.0	6.6	3.9
	32	104g	South Wall	27.3	27.3	0.7	138.6	269.4	6.7	3.9
	33	104g	South Wall	30.2	27.0	0.8	137.6	234.7	6.2	4.0
	34	104g	South Wall	30.7	30.7	0.7	139.9	248.0	7.5	4.1
	35	104g	South Wall	30.2	30.2	0.7	137.6	201.5	7.3	4.2
	36	104g	South Wall	27.0	27.0	0.7	137.8	234.2	7.0	3.9
	37	104g	South Wall	26.9	26.9	0.7	137.9	235.0	6.6	3.9
	38	104g	South Wall	24.6	24.6	0.6	138.5	283.4	6.6	3.9
	39	104g	South Wall	26.2	26.2	0.7	137.8	261.1	7.4	4.2
	40	104g	South Wall	28.3	28.3	0.7	137.6	243.6	6.8	3.8
	41	104g	South Wall	25.6	25.6	0.7	137.9	253.4	6.2	3.6
	42	104g	South Wall	24.3	4.8	0.6	143.4	213.9	6.7	3.9
	43	104g	South Wall	25.5	25.5	0.7	153.3	246.7	6.7	4.0
	44	104g	South Wall	24.9	23.9	0.8	138.5	283.3	5.4	3.7
	45	104g	South Wall	28.8	28.8	0.7	117.8	201.8	6.9	4.1
	46	104g	South Wall	27.4	27.4	0.6	138.4	238.8	7.0	4.0
	47	104g	South Wall	32.3	29.0	0.8	117.4	232.5	6.9	4.0
	48	104g	South Wall	26.5	26.5	0.6	138.4	283.1	6.5	3.8
	49	104g	South Wall	30.2	5.9	0.7	142.9	238.9	7.7	4.3
	50	104g	South Wall	26.6	26.6	0.6	117.8	253.7	6.8	3.8
	51	104g	South Wall	27.7	27.7	0.6	145.0	239.3	6.5	3.8
	52	104g	South Wall	25.8	25.8	0.7	137.7	244.4	6.7	3.6
	53	104g	South Wall	25.9	4.6	0.7	160.4	239.7	6.7	3.8
	54	104g	South Wall	26.4	26.4	0.7	142.8	248.7	6.4	3.6
	55	104g	South Wall	29.1	26.8	0.8	156.7	260.7	6.6	4.2
	56	104g	South Wall	28.2	6.2	0.7	142.6	238.0	7.0	3.9

Table A-18. Test 7 South wall pressure-time values for sheep nos. 829 and 830 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	57	104g	South Wall	25.2	25.2	0.7	143.8	261.0	6.7	3.9
	58	104g	South Wall	26.2	4.6	0.7	121.3	236.8	5.2	3.8
	59	104g	South Wall	27.5	27.5	0.6	138.0	234.3	7.1	4.2
	60	104g	South Wall	28.8	28.8	0.7	137.3	233.7	7.3	4.2
	61	104g	South Wall	27.4	27.4	0.7	138.2	243.4	6.7	3.7
	62	104g	South Wall	27.8	26.3	0.8	142.7	201.4	5.6	3.8
	63	104g	South Wall	25.3	25.3	0.7	141.5	264.6	6.3	3.6
	64	104g	South Wall	33.2	25.7	0.7	137.9	201.3	6.5	3.9
	65	104g	South Wall	26.6	25.9	0.8	138.1	282.7	6.0	3.9
	66	104g	South Wall	25.7	25.7	0.7	139.9	260.7	6.9	3.9
	67	104g	South Wall	28.6	28.6	0.7	137.1	201.2	7.4	4.2
	68	104g	South Wall	26.4	26.4	0.7	137.5	260.7	6.7	3.9
	69	104g	South Wall	39.3	27.5	0.8	109.1	188.4	7.4	4.2
	70	104g	South Wall	27.4	27.4	0.7	137.9	247.8	6.8	3.7
	71	104g	South Wall	24.9	24.9	0.6	138.7	234.1	6.7	3.8
	72	104g	South Wall	31.2	26.6	0.9	137.3	239.0	6.6	4.0
	73	104g	South Wall	26.4	26.4	0.7	141.4	247.2	6.5	3.7
	74	104g	South Wall	28.0	28.0	0.7	137.4	234.1	7.0	3.9
	75	104g	South Wall	26.3	26.3	0.7	153.2	234.3	6.7	3.8
	76	104g	South Wall	25.5	25.5	0.7	137.5	260.8	6.8	3.9
	77	104g	South Wall	25.7	25.7	0.7	138.2	260.6	7.1	4.0
	78	104g	South Wall	27.5	25.5	0.7	117.8	233.2	6.1	3.9
	79	104g	South Wall	30.7	30.7	0.7	117.2	201.1	7.5	4.1
	80	104g	South Wall	34.0	26.4	0.8	136.0	200.8	6.0	4.0
	81	104g	South Wall	27.8	26.5	0.7	138.2	234.2	5.2	4.0
	82	104g	South Wall	27.5	26.2	0.8	153.0	201.1	5.3	4.0
	83	104g	South Wall	26.4	26.4	0.7	137.7	273.4	6.7	4.0
	84	104g	South Wall	24.5	24.5	0.7	137.9	275.8	6.6	3.8
	86	104g	South Wall	28.9	24.6	0.7	117.5	233.1	5.5	3.8
	87	104g	South Wall	37.7	26.6	0.8	87.5	194.8	5.8	3.9
	88	104g	South Wall	32.1	32.1	0.7	136.0	239.1	7.8	4.5
	89	104g	South Wall	25.8	25.8	0.6	138.2	253.1	6.4	3.6
	90	104g	South Wall	29.6	29.6	0.6	137.5	180.4	7.0	4.0
	91	104g	South Wall	25.6	25.6	0.7	155.0	274.2	6.9	4.1
	92	104g	South Wall	26.8	26.8	0.7	140.6	243.1	6.2	3.6
	93	104g	South Wall	26.7	26.7	0.7	137.5	238.6	7.0	3.9
	94	104g	South Wall	28.1	28.1	0.7	117.5	245.1	6.7	4.0
	95	104g	South Wall	26.8	26.3	0.8	137.8	257.1	5.3	3.8
	96	104g	South Wall	32.5	26.2	0.8	117.1	228.4	6.6	4.0
	97	104g	South Wall	29.4	28.1	0.9	137.4	253.0	6.1	4.0
	98	104g	South Wall	29.5	29.5	0.7	137.2	232.6	7.0	4.0
	99	104g	South Wall	28.0	28.0	0.7	137.3	233.9	6.7	3.9
	100	104g	South Wall	30.1	26.1	0.8	137.8	242.9	6.1	4.0
Mean				27.7	25.4	0.7	138.1	241.1	6.6	3.9
SD				2.9	5.5	0.1	11.0	23.3	0.6	0.2

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-19. Test 7 East wall pressure-time values for sheep nos. 829 and 830

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/2/97	1	104g	East Wall	18.6	3.9	2.2	244.1	384.4	17.5	6.6
	2	104g	East Wall	17.0	4.5	2.5	294.8	384.7	16.5	6.0
	3	104g	East Wall	18.9	3.2	1.9	290.0	383.8	16.7	6.6
	4	104g	East Wall	16.2	3.8	1.4	282.0	383.7	7.3	7.3
	5	104g	East Wall	16.6	3.7	1.4	247.2	331.9	7.6	5.5
	6	104g	East Wall	18.9	3.3	1.7	245.0	350.4	14.5	5.8
	7	104g	East Wall	18.8	3.4	2.1	243.2	358.0	16.1	6.6
	8	104g	East Wall	19.8	3.7	1.6	246.9	354.4	14.3	6.3
	9	104g	East Wall	19.3	3.7	2.6	289.7	401.5	18.5	6.5
	10	104g	East Wall	18.9	3.4	1.3	247.6	354.4	7.0	6.6
	11	104g	East Wall	16.1	4.3	2.6	290.0	439.2	16.7	5.9
	12	104g	East Wall	17.2	8.6	2.2	279.3	384.7	15.2	6.2
	13	104g	East Wall	16.4	3.5	2.6	289.4	383.6	17.9	6.4
	14	104g	East Wall	19.5	3.6	0.8	235.6	300.0	5.8	6.7
	15	104g	East Wall	11.8	1.9	1.7	300.3	397.0	11.3	4.2
	16	104g	East Wall	20.5	3.8	2.6	286.2	354.5	18.4	6.6
	17	104g	East Wall	17.7	3.6	1.5	277.3	354.5	14.2	5.9
	18	104g	East Wall	18.4	4.3	2.2	290.2	395.6	19.4	6.9
	19	104g	East Wall	17.4	3.6	1.6	280.5	360.8	13.7	5.7
	20	104g	East Wall	16.4	3.5	2.3	277.3	394.0	17.4	6.4
	21	104g	East Wall	17.5	3.5	2.3	277.5	354.1	16.0	6.3
	22	104g	East Wall	18.4	4.3	2.8	291.4	383.9	18.0	6.4
	23	104g	East Wall	18.9	3.5	2.3	292.7	395.6	18.0	6.6
	24	104g	East Wall	17.8	3.8	2.3	243.3	423.3	15.3	6.3
	25	104g	East Wall	16.7	4.1	2.2	292.6	422.9	18.3	6.7
	26	104g	East Wall	20.2	3.4	1.8	243.3	350.0	9.2	6.7
	27	104g	East Wall	17.0	3.5	2.3	289.6	401.3	17.0	6.3
	28	104g	East Wall	16.9	4.0	1.6	289.7	385.7	8.4	6.1
	29	104g	East Wall	19.3	6.0	2.6	234.6	383.4	17.6	6.3
	30	104g	East Wall	17.5	3.4	1.3	269.3	362.8	7.6	6.5
	31	104g	East Wall	14.9	4.2	2.2	277.1	401.7	16.3	6.1
	32	104g	East Wall	17.0	3.6	1.7	289.6	383.3	14.7	6.4
	33	104g	East Wall	19.0	3.4	2.5	289.3	383.2	18.2	6.7
	34	104g	East Wall	19.5	3.6	2.6	276.7	393.2	18.8	6.8
	35	104g	East Wall	17.1	4.4	2.1	293.2	421.6	16.9	6.8
	36	104g	East Wall	18.0	3.6	2.5	289.2	353.6	17.8	6.4
	37	104g	East Wall	17.6	4.2	2.6	288.9	383.2	16.4	5.9
	38	104g	East Wall	21.0	3.7	1.6	232.9	296.1	14.5	6.3
	39	104g	East Wall	19.0	3.4	0.8	235.9	299.1	6.4	6.6
	40	104g	East Wall	16.1	4.2	0.8	227.2	353.8	5.3	6.1
	41	104g	East Wall	17.7	3.7	2.0	276.4	383.2	14.4	5.7
	42	104g	East Wall	16.4	7.1	0.9	239.1	318.0	5.5	6.1
	43	104g	East Wall	17.6	4.1	0.8	209.6	284.0	6.3	6.3
	44	104g	East Wall	16.9	3.2	1.5	277.0	383.3	14.2	6.0
	45	104g	East Wall	18.4	3.5	2.4	276.8	393.3	17.6	6.4
	46	104g	East Wall	16.3	4.6	2.7	294.5	401.8	15.7	6.5
	47	104g	East Wall	19.6	4.0	0.7	203.1	283.6	4.6	6.6
	48	104g	East Wall	19.0	3.5	1.6	224.3	353.4	14.6	6.0
	49	104g	East Wall	19.7	9.0	0.8	213.8	299.8	7.1	6.8
	50	104g	East Wall	17.2	3.7	2.0	276.9	359.2	15.5	6.2
	51	104g	East Wall	17.3	5.4	1.6	291.9	371.3	15.0	6.1
	52	104g	East Wall	17.1	3.9	2.8	289.6	401.1	17.8	6.3
	53	104g	East Wall	18.2	5.9	2.0	279.6	358.4	15.9	6.0

Table A-19. Test 7 East wall pressure-time values for sheep nos. 829 and 830 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	54	104g	East Wall	19.0	5.0	1.5	245.4	355.8	13.8	5.9
	55	104g	East Wall	22.6	3.7	3.1	238.5	382.4	17.2	6.8
	56	104g	East Wall	16.8	9.5	2.1	294.6	401.9	17.5	6.4
	57	104g	East Wall	18.1	3.4	0.8	203.7	316.8	5.1	6.5
	58	104g	East Wall	17.2	7.8	0.7	211.9	284.0	4.8	6.0
	59	104g	East Wall	21.6	3.7	2.0	231.9	349.1	16.2	6.8
	60	104g	East Wall	17.2	3.5	2.6	289.7	402.5	18.8	6.7
	61	104g	East Wall	23.4	3.7	0.2	93.5	208.7	2.2	6.2
	62	104g	East Wall	16.6	3.5	0.2	185.4	275.5	1.7	6.3
	63	104g	East Wall	16.7	3.0	1.6	278.2	359.4	13.6	5.8
	64	104g	East Wall	17.4	3.5	1.6	277.7	382.8	8.5	6.1
	65	104g	East Wall	19.2	3.7	2.2	289.0	382.4	17.0	6.2
	66	104g	East Wall	18.6	4.0	1.3	242.7	369.1	7.2	6.2
	67	104g	East Wall	19.2	4.3	1.9	242.6	382.2	9.1	6.5
	68	104g	East Wall	19.5	4.4	1.9	232.8	383.6	14.5	6.3
	69	104g	East Wall	18.8	3.2	2.6	288.7	382.5	18.0	6.5
	70	104g	East Wall	15.9	4.4	2.6	291.8	384.1	16.5	6.0
	71	104g	East Wall	18.9	3.7	1.7	276.6	353.5	14.2	6.2
	72	104g	East Wall	16.7	3.4	2.8	292.0	424.0	18.2	6.4
	73	104g	East Wall	17.4	3.6	1.3	228.4	354.1	7.5	5.9
	74	104g	East Wall	18.9	3.7	2.2	242.8	393.1	16.9	6.4
	75	104g	East Wall	17.8	3.8	2.4	289.2	400.8	17.1	6.1
	76	104g	East Wall	20.2	3.3	2.0	276.4	356.2	16.1	6.4
	77	104g	East Wall	17.2	3.6	2.1	276.6	400.3	15.8	6.5
	78	104g	East Wall	16.2	3.9	2.1	277.3	394.6	15.7	6.3
	79	104g	East Wall	18.1	3.6	2.6	289.4	394.1	18.8	6.7
	80	104g	East Wall	18.3	3.3	2.2	276.0	397.2	17.6	6.5
	81	104g	East Wall	19.0	3.4	2.1	242.7	400.3	15.0	6.1
	82	104g	East Wall	17.4	3.8	2.8	286.0	400.1	17.6	6.2
	83	104g	East Wall	19.1	3.6	1.6	242.4	382.3	14.5	6.3
	84	104g	East Wall	17.9	3.3	0.9	227.0	283.5	5.6	6.0
	86	104g	East Wall	18.7	4.2	1.4	239.0	358.2	8.7	6.0
	87	104g	East Wall	18.3	4.0	2.4	276.2	392.7	17.4	6.4
	88	104g	East Wall	20.7	5.2	1.0	215.9	316.8	5.7	6.9
	89	104g	East Wall	16.2	3.7	1.6	276.4	382.4	13.3	5.6
	90	104g	East Wall	18.8	3.7	2.2	276.0	392.6	16.0	6.4
	91	104g	East Wall	18.6	3.1	1.9	222.6	392.5	15.9	6.5
	92	104g	East Wall	17.4	3.6	1.7	276.6	392.8	13.6	6.0
	93	104g	East Wall	19.4	3.6	1.9	242.4	381.9	15.4	6.3
	94	104g	East Wall	16.7	3.6	0.9	226.2	298.9	5.5	6.2
	95	104g	East Wall	16.8	3.6	0.8	208.5	352.9	6.0	5.9
	96	104g	East Wall	17.3	3.7	1.8	276.0	399.5	9.4	6.3
	97	104g	East Wall	19.8	3.7	2.8	288.4	392.1	15.8	6.8
	98	104g	East Wall	17.3	3.7	2.2	275.9	399.4	16.9	6.4
	99	104g	East Wall	18.2	4.1	1.0	202.6	298.1	7.0	6.1
	100	104g	East Wall	19.7	3.2	1.6	242.1	347.3	8.8	6.3
Mean				18.1	4.0	1.9	260.8	367.8	13.4	6.3
SD				1.6	1.2	0.6	33.3	39.4	4.8	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-20. Test 8 North wall pressure-time values for sheep nos. 831 and 832

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/4/97	1	104g	North Wall	31.8	21.0	0.9	668.2	668.2	5.6	12.0
	2	104g	North Wall	41.9	19.5	852.7	664.5	668.9	4531.1	15.0
	3	104g	North Wall	52.2	20.8	571.3	666.1	667.0	3257.2	15.3
	4	104g	North Wall	29.7	20.4	0.8	668.2	668.2	5.8	9.2
	5	104g	North Wall	26.8	21.8	0.5	663.6	663.7	5.3	5.7
	6	104g	North Wall	33.7	21.1	0.7	87.5	189.6	5.9	3.0
	7	104g	North Wall	27.6	7.2	0.7	668.9	668.9	5.5	4.8
	8	104g	North Wall							
	9	104g	North Wall	29.2	20.2	0.8	668.2	668.2	5.7	5.3
	10	104g	North Wall	23.9	20.2	0.7	668.9	668.9	5.2	7.7
	11	104g	North Wall	28.0	20.4	0.6	74.8	215.7	5.1	2.8
	12	104g	North Wall	27.6	21.3	0.8	668.3	668.3	5.5	4.3
	13	104g	North Wall	28.7	21.3	0.8	191.1	668.9	5.3	3.2
	14	104g	North Wall	33.2	22.3	0.8	257.5	668.3	6.2	3.8
	15	104g	North Wall	29.7	21.5	0.8	110.8	190.5	6.1	3.0
	16	104g	North Wall	21.1	18.9	0.9	166.4	239.3	4.7	2.3
	17	104g	North Wall	31.6	21.4	0.8	668.9	668.9	5.5	4.8
	18	104g	North Wall	35.1	20.5	0.8	88.0	215.4	6.7	2.9
	19	104g	North Wall	30.2	20.8	0.8	110.9	190.6	5.9	3.0
	20	104g	North Wall	22.9	21.0	0.6	120.0	192.4	5.3	2.8
	21	104g	North Wall	28.1	20.7	0.6	74.7	190.6	5.3	2.8
	22	104g	North Wall	29.4	21.4	0.8	110.8	191.9	6.1	2.9
	23	104g	North Wall	29.6	21.3	0.8	110.9	195.4	5.8	2.9
	24	104g	North Wall	26.2	21.4	0.6	114.8	196.8	5.0	2.9
	25	104g	North Wall	28.5	21.2	0.6	437.4	667.3	5.0	4.4
	26	104g	North Wall							
	27	104g	North Wall	31.0	20.2	0.9	109.6	191.5	5.5	2.9
	28	104g	North Wall	32.8	20.7	0.7	74.8	183.5	5.7	2.9
	29	104g	North Wall	34.7	21.7	0.8	663.4	668.9	5.7	5.9
	30	104g	North Wall	29.6	20.8	0.8	101.3	190.4	5.9	2.9
	31	104g	North Wall	25.8	20.3	0.8	663.7	663.7	4.9	7.3
	32	104g	North Wall	28.1	21.0	0.7	87.8	191.3	5.4	2.9
	33	104g	North Wall	30.1	20.8	0.6	87.1	191.9	5.5	2.9
	34	104g	North Wall	33.0	21.0	0.6	87.6	158.5	5.9	3.0
	35	104g	North Wall	31.5	22.7	0.7	110.7	183.1	5.4	3.1
	36	104g	North Wall	24.6	21.7	0.7	110.9	191.7	4.8	2.9
	37	104g	North Wall	28.5	20.2	0.8	87.9	191.2	5.5	2.7
	38	104g	North Wall	32.5	20.4	0.8	88.0	127.8	5.6	2.7
	39	104g	North Wall	26.3	19.4	0.8	104.4	194.7	5.3	2.5
	40	104g	North Wall	26.8	8.8	0.8	122.0	219.8	5.6	2.9
	41	104g	North Wall	27.5	19.5	0.8	110.9	191.7	5.5	2.7
	42	104g	North Wall	31.8	20.5	0.9	87.2	194.2	5.8	2.9
	43	104g	North Wall	25.5	20.1	0.7	110.8	194.7	5.4	2.9
	44	104g	North Wall	30.7	21.8	0.6	74.6	183.4	5.2	2.9
	45	104g	North Wall	31.6	22.1	0.7	119.6	346.8	5.7	3.0
	46	104g	North Wall	30.5	20.3	0.8	87.4	214.8	5.8	2.7
	47	104g	North Wall	24.2	21.5	0.6	89.0	195.6	5.2	2.8
	48	104g	North Wall	31.8	21.9	0.9	109.3	193.7	5.8	3.2
	49	104g	North Wall	37.1	20.0	0.6	74.1	137.8	5.7	2.9
	50	104g	North Wall	33.0	22.2	0.8	88.0	157.7	6.2	3.1
	51	104g	North Wall	27.0	21.1	0.8	115.4	196.4	5.5	2.9
	52	104g	North Wall	33.4	20.8	0.8	74.7	157.7	6.0	2.8
	53	104g	North Wall	26.7	21.0	0.8	87.8	191.5	5.7	2.8
	54	104g	North Wall	26.1	19.8	0.9	157.2	263.3	5.0	2.5
	55	104g	North Wall	33.8	21.5	0.9	91.3	197.2	6.1	2.9
	56	104g	North Wall	29.1	6.3	0.8	91.0	193.7	5.7	2.8
	57	104g	North Wall	31.2	21.5	0.9	110.5	190.1	5.4	2.9

Table A-20. Test 8 North wall pressure-time values for sheep nos. 831 and 832 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	North Wall	36.8	21.4	0.7	88.5	182.8	6.2	3.2
	59	104g	North Wall	28.4	22.5	0.9	110.6	190.2	6.1	3.1
	60	104g	North Wall	33.9	21.5	0.7	87.7	155.7	5.4	3.0
	61	104g	North Wall	31.1	22.1	0.7	87.9	214.2	6.3	3.0
	62	104g	North Wall	32.0	22.2	0.9	108.5	222.0	6.6	3.3
	63	104g	North Wall	30.8	20.6	0.8	86.7	191.0	5.9	2.6
	64	104g	North Wall	31.0	20.1	0.8	87.9	191.0	5.5	2.9
	65	104g	North Wall	20.4	20.4	0.6	138.6	238.6	5.0	2.6
	66	104g	North Wall	28.8	23.4	0.9	121.8	215.0	6.4	3.3
	67	104g	North Wall	27.4	20.8	0.6	93.1	196.1	5.0	2.7
	68	104g	North Wall	33.1	21.1	0.9	101.1	189.9	5.8	3.0
	69	104g	North Wall	28.4	19.8	0.8	87.6	191.6	5.4	2.6
	70	104g	North Wall	30.7	22.1	0.8	110.6	192.6	5.7	3.0
	71	104g	North Wall	30.9	19.6	0.8	110.7	190.1	5.6	2.7
	72	104g	North Wall	28.6	20.1	0.7	101.1	183.2	5.3	2.7
	73	104g	North Wall	26.8	20.5	0.6	87.9	195.6	5.1	2.8
	74	104g	North Wall	33.4	20.7	0.8	101.1	190.1	6.0	2.9
	75	104g	North Wall	26.4	19.8	0.8	110.7	232.8	5.3	2.6
	76	104g	North Wall	29.0	22.1	0.7	110.7	209.3	5.3	3.2
	77	104g	North Wall	28.3	22.8	0.9	87.3	247.2	5.9	2.9
	78	104g	North Wall	25.3	21.3	0.7	110.6	215.0	5.7	2.8
	79	104g	North Wall	27.0	20.4	0.6	110.7	338.6	4.9	2.8
	80	104g	North Wall	29.1	22.0	0.7	110.6	182.6	5.1	2.8
	81	104g	North Wall	27.9	22.8	0.8	110.8	214.6	6.2	3.3
	82	104g	North Wall	28.0	7.6	0.6	129.5	528.9	5.4	2.9
	83	104g	North Wall	21.6	19.5	0.7	668.9	668.9	5.0	2.5
	84	104g	North Wall	27.7	20.0	0.7	87.5	191.0	5.1	2.7
	85	104g	North Wall	28.3	20.1	0.8	110.6	190.1	5.5	2.9
	86	104g	North Wall	33.6	21.9	0.8	667.0	667.9	6.3	5.7
	87	104g	North Wall	30.1	19.6	0.8	170.3	170.3	5.7	13.0
	88	104g	North Wall	30.1	19.9	0.6	74.6	194.2	5.4	2.7
	89	104g	North Wall	31.7	21.6	0.6	74.4	182.6	5.5	2.9
	90	104g	North Wall	22.4	5.7	0.7	140.7	218.8	4.8	2.5
	91	104g	North Wall	32.6	21.9	0.8	87.3	209.0	6.1	3.1
	92	104g	North Wall	33.8	5.9	0.8	92.7	162.5	6.0	3.0
	93	104g	North Wall	28.9	22.9	0.6	74.4	208.8	5.8	3.2
	94	104g	North Wall	38.6	22.0	1.0	85.7	189.7	6.0	3.0
	95	104g	North Wall	34.9	21.2	0.9	110.3	189.7	5.7	3.0
	96	104g	North Wall	21.7	21.7	0.6	190.3	630.5	5.2	3.0
	97	104g	North Wall	34.8	21.1	0.7	67.8	152.8	5.6	2.9
	98	104g	North Wall	40.0	22.5	0.7	60.6	215.8	5.8	3.0
	99	104g	North Wall	30.2	21.9	0.8	123.6	261.3	5.8	3.1
	100	104g	North Wall	33.4	21.2	0.8	87.3	189.7	5.8	2.8
Mean				30.0	20.2	15.4	183.6	284.2	85.8	3.6
SD				4.5	3.6	103.6	196.0	182.3	563.0	2.2

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-21. Test 8 South wall pressure-time values for sheep nos. 831 and 832

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/4/97	1	104g	South Wall	28.7	28.7	0.8	138.2	235.5	7.2	3.8
	2	104g	South Wall	24.2	24.2	0.7	159.9	273.1	6.3	3.7
	3	104g	South Wall	30.0	30.0	0.7	138.9	235.2	7.5	4.1
	4	104g	South Wall	29.4	29.4	0.7	138.7	230.0	7.1	4.0
	5	104g	South Wall	27.9	27.9	0.8	138.9	275.2	7.1	4.0
	6	104g	South Wall	29.9	29.9	0.7	139.0	230.0	7.1	4.0
	7	104g	South Wall	26.7	6.6	0.6	143.5	236.3	6.7	3.8
	8	104g	South Wall	30.0	30.0	0.7	137.7	230.1	7.1	4.0
	9	104g	South Wall	29.0	29.0	0.7	141.0	204.1	6.5	3.7
	10	104g	South Wall	24.4	24.4	0.7	156.3	277.2	6.5	3.6
	11	104g	South Wall	28.5	27.2	0.7	139.0	235.4	5.9	3.9
	12	104g	South Wall	33.3	26.8	0.8	138.1	235.2	5.4	3.8
	13	104g	South Wall	26.0	26.0	0.7	139.7	268.3	7.2	3.9
	14	104g	South Wall	29.5	29.5	0.7	117.8	189.4	7.5	4.1
	15	104g	South Wall	26.6	26.6	0.7	138.9	236.4	7.1	4.0
	16	104g	South Wall	22.4	22.4	0.8	155.0	266.7	6.0	3.3
	17	104g	South Wall	28.2	27.0	0.8	137.7	229.9	5.7	3.9
	18	104g	South Wall	30.1	30.1	0.6	140.9	189.4	7.3	4.1
	19	104g	South Wall	26.4	26.4	0.7	140.9	235.5	7.1	3.9
	20	104g	South Wall	27.0	27.0	0.7	138.9	235.3	6.8	3.8
	21	104g	South Wall	29.4	28.2	0.9	139.6	229.8	5.6	3.8
	22	104g	South Wall	31.2	31.2	0.6	139.7	234.3	7.2	3.9
	23	104g	South Wall	27.6	27.6	0.7	137.8	235.4	7.1	3.9
	24	104g	South Wall	26.5	26.4	0.8	142.7	239.1	5.6	3.9
	25	104g	South Wall	27.9	27.9	0.7	138.4	235.4	7.1	3.9
	26	104g	South Wall							
	27	104g	South Wall	27.0	27.0	0.7	138.4	236.1	7.1	3.9
	28	104g	South Wall	28.5	28.5	0.7	140.9	230.5	6.9	3.9
	29	104g	South Wall	26.4	26.3	0.8	155.1	240.1	6.4	4.0
	30	104g	South Wall	25.7	25.7	0.7	140.8	235.3	6.9	3.9
	31	104g	South Wall	25.8	25.8	0.7	143.0	235.3	6.8	3.6
	32	104g	South Wall	25.7	25.7	0.6	139.6	234.9	7.0	3.9
	33	104g	South Wall	28.6	28.6	0.7	138.2	235.1	7.0	4.0
	34	104g	South Wall	27.5	27.5	0.7	140.7	235.0	7.1	4.0
	35	104g	South Wall	32.3	30.1	0.7	102.6	189.2	6.1	4.2
	36	104g	South Wall	27.7	27.6	0.8	139.6	274.9	6.3	3.9
	37	104g	South Wall	29.0	25.5	0.6	124.3	189.3	4.9	3.9
	38	104g	South Wall	24.7	24.7	0.7	156.3	235.1	6.8	3.6
	39	104g	South Wall	27.5	27.5	0.7	141.4	239.5	6.4	3.7
	40	104g	South Wall	26.8	8.4	0.7	142.6	239.6	5.1	3.9
	41	104g	South Wall	24.7	24.7	0.7	138.3	235.9	6.8	3.7
	42	104g	South Wall	33.9	25.9	0.7	136.6	238.8	5.6	4.1
	43	104g	South Wall	27.2	27.2	0.7	139.2	235.4	6.9	3.7
	44	104g	South Wall	35.0	25.6	0.8	139.6	229.6	5.8	3.9
	45	104g	South Wall	26.7	26.7	0.7	139.0	236.1	7.2	3.9
	46	104g	South Wall	25.5	25.5	0.7	138.7	235.2	6.8	3.8
	47	104g	South Wall	27.0	24.8	0.8	142.5	265.7	5.9	3.7
	48	104g	South Wall	27.9	27.9	0.7	153.5	238.2	7.5	4.1
	49	104g	South Wall	29.3	29.3	0.7	137.8	234.9	6.8	4.0
	50	104g	South Wall	30.3	30.3	0.7	117.8	234.7	7.7	4.2
	51	104g	South Wall	25.9	4.1	0.8	145.3	279.9	6.9	3.8
	52	104g	South Wall	27.6	27.6	0.7	137.8	235.0	6.9	3.7
	53	104g	South Wall	25.8	25.8	0.7	155.9	229.7	6.9	3.9
	54	104g	South Wall	23.7	23.7	0.7	154.7	235.9	6.4	3.6
	55	104g	South Wall	30.8	26.3	0.7	142.1	239.4	6.0	4.1
	56	104g	South Wall	25.6	5.3	0.7	143.8	279.7	7.0	3.7

Table A-21. Test 8 South wall pressure-time values for sheep nos. 831 and 832 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	57	104g	South Wall	27.3	27.2	0.7	139.4	254.0	5.5	3.9
	58	104g	South Wall	30.6	30.6	0.7	117.7	229.2	7.5	4.0
	59	104g	South Wall	32.1	28.8	0.8	137.6	234.4	6.7	4.0
	60	104g	South Wall	29.6	29.6	0.7	137.7	229.2	7.2	4.0
	61	104g	South Wall	27.1	27.1	0.7	138.4	234.4	7.1	4.0
	62	104g	South Wall	30.8	30.8	0.8	138.0	193.7	7.6	4.2
	63	104g	South Wall	25.5	25.5	0.6	138.0	278.1	6.7	3.8
	64	104g	South Wall	29.1	29.1	0.7	137.8	229.4	6.9	4.0
	65	104g	South Wall	24.3	24.3	0.7	154.6	283.7	6.5	3.7
	66	104g	South Wall	29.5	29.5	0.8	140.0	274.9	8.0	4.4
	67	104g	South Wall	25.2	25.2	0.7	159.6	240.0	6.7	3.8
	68	104g	South Wall	28.9	28.9	0.7	140.5	233.9	7.1	4.0
	69	104g	South Wall	27.4	27.4	0.6	138.5	234.6	6.6	3.8
	70	104g	South Wall	33.3	27.3	0.9	137.6	234.4	6.3	4.2
	71	104g	South Wall	25.3	25.3	0.6	144.5	234.8	6.8	3.7
	72	104g	South Wall	25.2	25.2	0.7	140.5	274.5	6.9	3.8
	73	104g	South Wall	30.2	26.6	0.7	136.8	234.5	5.9	3.7
	74	104g	South Wall	30.7	30.7	0.7	136.5	234.6	7.3	4.2
	75	104g	South Wall	27.2	27.2	0.6	117.9	235.0	6.5	3.6
	76	104g	South Wall	26.6	26.6	0.7	138.6	234.7	7.5	4.1
	77	104g	South Wall	29.1	28.9	1.7	187.8	295.8	12.0	4.2
	78	104g	South Wall	26.9	26.9	0.7	142.6	229.4	7.0	3.9
	79	104g	South Wall	25.5	25.5	0.7	138.5	234.8	6.9	4.0
	80	104g	South Wall	31.5	25.1	0.7	117.7	234.4	5.8	3.8
	81	104g	South Wall	29.4	28.5	1.7	153.2	282.9	13.3	4.3
	82	104g	South Wall	26.0	7.4	0.7	142.1	256.9	6.9	3.8
	83	104g	South Wall	24.9	24.9	0.6	159.2	281.2	6.3	3.7
	84	104g	South Wall	27.4	27.4	0.6	138.5	234.8	6.6	3.7
	85	104g	South Wall	27.5	27.5	0.7	139.3	234.6	6.8	3.9
	86	104g	South Wall	30.0	30.0	0.7	102.3	234.5	7.2	3.8
	87	104g	South Wall	27.7	27.7	0.6	138.4	234.4	6.6	3.6
	88	104g	South Wall	24.8	24.8	0.6	138.4	287.3	6.7	3.7
	89	104g	South Wall	28.1	26.6	0.7	137.8	234.5	5.7	3.8
	90	104g	South Wall	26.8	5.6	0.7	141.4	257.2	6.4	3.6
	91	104g	South Wall	29.1	29.1	0.7	138.0	234.3	7.8	4.2
	92	104g	South Wall	30.4	5.4	0.8	143.2	233.8	6.5	4.0
	93	104g	South Wall	30.7	30.7	0.7	137.8	234.2	7.6	4.1
	94	104g	South Wall	28.8	28.8	0.7	137.8	234.0	7.1	4.1
	95	104g	South Wall	28.6	27.8	0.9	137.1	234.2	6.0	3.9
	96	104g	South Wall	28.5	26.2	0.8	138.2	234.1	5.8	3.9
	97	104g	South Wall	28.6	28.6	0.7	139.0	234.1	7.0	3.7
	98	104g	South Wall	30.8	26.6	0.8	137.1	234.0	6.3	4.0
	99	104g	South Wall	31.5	31.5	0.7	107.0	237.0	7.5	4.1
	100	104g	South Wall	29.7	29.7	0.7	138.6	234.0	7.1	3.9
Mean				28.1	25.9	0.7	139.6	240.1	6.8	3.9
SD				2.4	5.8	0.2	11.2	20.7	1.0	0.2

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-22 Test 8 East wall pressure-time values for sheep nos. 831 and 832

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/4/97	1	104g	East Wall	19.2	4.9	2.6	270.6	361.8	18.3	6.5
	2	104g	East Wall	19.8	3.2	2.5	244.3	365.6	16.0	5.8
	3	104g	East Wall	20.5	4.1	1.0	227.5	332.6	6.0	7.1
	4	104g	East Wall	18.8	3.6	2.8	290.4	360.6	18.5	6.6
	5	104g	East Wall	24.5	3.8	0.8	189.9	285.0	5.6	6.4
	6	104g	East Wall	20.7	3.8	2.7	233.2	365.7	18.8	6.6
	7	104g	East Wall	19.9	10.2	2.0	250.5	365.9	16.0	6.3
	8	104g	East Wall	19.3	4.3	0.9	211.2	331.9	5.5	6.5
	9	104g	East Wall	17.1	3.7	2.7	270.4	382.2	17.3	6.2
	10	104g	East Wall	18.4	3.3	2.1	270.5	358.2	15.3	6.2
	11	104g	East Wall	22.3	4.2	1.0	211.1	320.6	6.2	6.3
	12	104g	East Wall	19.4	3.4	2.2	240.8	357.8	17.2	6.8
	13	104g	East Wall	19.4	4.0	0.9	211.2	341.2	5.8	6.4
	14	104g	East Wall	18.8	3.5	2.6	289.8	353.9	18.9	6.7
	15	104g	East Wall	19.6	3.8	0.7	210.2	311.4	4.7	6.7
	16	104g	East Wall	15.4	3.4	2.6	287.9	395.0	15.5	5.4
	17	104g	East Wall	17.1	3.4	1.4	245.2	384.4	8.9	6.6
	18	104g	East Wall	19.8	4.3	2.7	236.9	381.5	18.6	6.7
	19	104g	East Wall	18.7	3.4	0.9	227.6	341.1	5.4	6.8
	20	104g	East Wall	19.2	4.4	2.6	290.3	380.1	17.1	6.2
	21	104g	East Wall	18.8	4.5	0.9	213.6	332.4	5.7	6.3
	22	104g	East Wall	17.4	3.4	2.2	289.8	353.9	16.4	6.6
	23	104g	East Wall	18.0	4.0	2.7	290.0	384.3	18.0	6.4
	24	104g	East Wall	20.1	6.9	2.1	245.5	365.7	17.4	6.5
	25	104g	East Wall	18.4	4.0	2.7	290.0	383.9	18.2	6.4
	27	104g	East Wall	17.8	4.1	1.1	227.6	351.7	5.8	6.5
	28	104g	East Wall	17.8	3.4	2.2	277.6	361.0	17.4	6.6
	29	104g	East Wall	18.6	3.6	2.8	292.9	365.3	19.1	6.8
	30	104g	East Wall	21.0	3.3	2.7	233.2	363.4	18.4	6.5
	31	104g	East Wall	17.7	4.1	2.6	290.0	400.4	17.9	6.3
	32	104g	East Wall	18.8	3.2	2.7	282.1	383.8	17.8	6.3
	33	104g	East Wall	18.6	3.5	0.9	211.1	335.5	5.7	6.3
	34	104g	East Wall	18.6	3.8	0.9	206.6	323.4	5.8	6.5
	35	104g	East Wall	18.8	3.4	0.9	227.3	322.0	5.8	6.8
	36	104g	East Wall	19.2	3.4	2.5	246.6	383.6	17.1	6.0
	37	104g	East Wall	17.1	2.6	2.5	290.7	383.7	17.2	6.4
	38	104g	East Wall	18.6	3.8	2.1	267.2	363.9	15.4	6.0
	39	104g	East Wall	16.8	7.2	2.5	291.1	383.8	16.1	5.8
	40	104g	East Wall	20.0	12.4	0.8	214.0	286.0	5.3	6.4
	41	104g	East Wall	16.3	4.1	2.5	290.1	383.9	17.9	6.3
	42	104g	East Wall	18.3	2.9	2.3	291.5	381.5	17.4	6.6
	43	104g	East Wall	21.1	3.4	2.8	233.2	359.8	18.1	6.4
	44	104g	East Wall	18.6	3.6	0.9	227.3	364.7	5.3	6.5
	45	104g	East Wall	16.7	3.0	2.0	289.4	383.5	16.6	6.6
	46	104g	East Wall	16.1	3.8	1.0	228.1	357.3	5.6	6.2
	47	104g	East Wall	21.6	5.9	2.0	206.3	364.4	15.8	6.3
	48	104g	East Wall	17.5	3.5	1.4	248.2	320.2	6.6	6.8
	49	104g	East Wall	20.1	3.1	2.1	239.7	359.6	15.7	6.3
	50	104g	East Wall	21.2	3.5	1.0	223.5	330.9	6.3	6.7
	51	104g	East Wall	18.0	5.5	1.1	230.0	335.3	7.0	6.4
	52	104g	East Wall	14.8	2.5	2.3	289.7	383.8	16.1	6.4
	53	104g	East Wall	20.1	3.3	2.6	286.1	357.4	18.2	6.5
	54	104g	East Wall	18.6	3.2	0.3	164.2	249.0	2.1	5.7
	55	104g	East Wall	23.5	4.2	0.9	194.3	272.2	6.2	6.7
	56	104g	East Wall	19.0	9.5	2.5	244.5	370.1	18.0	6.5
	57	104g	East Wall	17.8	3.8	2.3	287.9	369.9	16.6	6.6
	58	104g	East Wall	20.3	3.5	1.3	236.3	319.3	10.7	6.8

Table A-22. Test 8 East wall pressure-time values for sheep nos. 831 and 832 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	59	104g	East Wall	18.4	3.5	2.7	269.2	382.8	18.3	6.5
	60	104g	East Wall	17.4	3.9	1.1	245.7	364.0	5.6	6.6
	61	104g	East Wall	17.6	3.3	2.3	269.4	369.7	17.8	6.5
	62	104g	East Wall	18.6	4.1	2.2	279.7	384.9	18.2	7.2
	63	104g	East Wall	18.2	3.3	0.9	236.5	352.5	5.6	6.1
	64	104g	East Wall	17.8	3.6	1.0	227.1	331.7	5.3	6.3
	65	104g	East Wall	16.5	3.7	1.6	289.8	383.8	13.7	6.1
	66	104g	East Wall	20.4	3.4	1.2	167.8	318.9	7.5	7.4
	67	104g	East Wall	16.6	3.7	2.1	280.3	385.7	14.6	6.0
	68	104g	East Wall	18.4	3.8	1.0	227.2	370.1	5.4	6.7
	69	104g	East Wall	18.4	4.6	2.1	247.4	369.9	16.1	6.1
	70	104g	East Wall	19.3	3.4	0.9	226.9	319.3	5.7	6.6
	71	104g	East Wall	19.2	3.4	2.6	266.6	383.2	17.3	6.2
	72	104g	East Wall	17.8	3.4	2.1	277.0	383.3	16.4	6.3
	73	104g	East Wall	17.2	4.1	2.7	269.4	364.1	17.8	6.2
	74	104g	East Wall	17.8	3.7	1.0	226.6	321.5	5.7	6.9
	75	104g	East Wall	17.8	3.4	2.1	241.4	393.8	15.1	5.9
	76	104g	East Wall	16.5	3.6	0.8	245.4	332.4	5.4	7.1
	77	104g	East Wall	19.9	3.2	1.0	204.6	319.4	6.3	6.3
	78	104g	East Wall	18.4	3.7	0.9	226.9	319.5	5.7	6.3
	79	104g	East Wall	18.8	4.0	2.5	289.1	386.6	17.3	6.3
	80	104g	East Wall	17.5	3.5	1.5	248.2	370.6	13.4	6.4
	81	104g	East Wall	18.0	3.2	2.2	289.0	382.7	18.3	6.9
	82	104g	East Wall	17.7	12.0	2.7	290.0	382.9	17.8	6.3
	83	104g	East Wall	17.1	4.7	1.0	229.6	332.2	5.7	5.8
	84	104g	East Wall	16.3	3.9	1.5	290.4	369.8	13.4	6.0
	85	104g	East Wall	19.2	3.9	2.7	266.5	383.0	18.4	6.5
	86	104g	East Wall	19.7	3.7	2.0	240.6	369.8	16.0	6.5
	87	104g	East Wall	17.8	3.8	2.2	267.4	382.9	15.5	6.1
	88	104g	East Wall	19.1	4.3	2.0	278.8	383.5	15.6	6.1
	89	104g	East Wall	19.1	3.3	2.7	289.2	382.9	17.9	6.6
	90	104g	East Wall	19.7	8.8	2.1	243.7	356.7	13.7	5.5
	91	104g	East Wall	19.8	3.3	0.8	211.4	322.5	5.2	6.8
	92	104g	East Wall	17.1	8.5	2.0	291.7	371.1	17.3	6.8
	93	104g	East Wall	18.0	3.7	2.6	288.8	396.7	19.8	7.2
	94	104g	East Wall	18.2	4.1	2.0	242.6	382.4	16.3	6.5
	95	104g	East Wall	15.9	2.4	2.1	288.9	396.9	17.2	6.5
	96	104g	East Wall	17.3	4.2	0.8	226.6	318.9	6.0	6.5
	97	104g	East Wall	18.1	3.1	2.2	289.0	382.4	17.0	6.3
	98	104g	East Wall	18.2	3.3	1.3	242.4	347.0	6.9	6.8
	99	104g	East Wall	17.0	5.9	2.1	291.8	384.2	16.7	6.9
	100	104g	East Wall	18.1	3.9	0.9	226.3	358.3	5.6	6.2
Mean				18.6	4.2	1.8	252.1	358.2	12.8	6.4
SD				1.6	1.8	0.7	32.2	29.3	5.5	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-23. Test 9 North wall pressure-time values for sheep nos. 833 and 834

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/9/97	1	104g	North Wall	27.9	23.9	1.1	155.8	265.9	10.3	3.2
	2	104g	North Wall	34.6	20.9	0.8	109.2	171.6	5.7	3.0
	3	104g	North Wall	31.7	21.1	0.7	110.7	214.4	5.7	3.1
	4	104g	North Wall	25.4	23.0	1.1	152.0	266.0	10.2	3.2
	5	104g	North Wall	24.9	5.3	0.7	147.5	253.7	5.6	3.3
	6	104g	North Wall	28.9	22.7	0.9	132.6	265.2	5.4	3.0
	7	104g	North Wall	32.9	22.2	0.8	109.4	201.0	6.8	3.3
	8	104g	North Wall	27.9	24.8	0.7	112.7	259.2	5.9	3.3
	9	104g	North Wall	30.3	21.5	0.8	135.5	267.4	5.9	3.3
	10	104g	North Wall	26.9	24.3	1.1	146.9	264.9	11.1	3.3
	11	104g	North Wall	34.7	20.3	0.8	87.8	214.5	5.9	2.9
	12	104g	North Wall	37.9	25.2	0.8	110.3	213.4	6.8	3.5
	13	104g	North Wall	30.2	21.3	0.7	111.4	214.5	5.8	3.1
	14	104g	North Wall	38.3	22.0	0.7	94.0	158.2	5.4	2.8
	15	104g	North Wall	29.2	21.3	0.8	115.0	263.9	5.3	3.0
	16	104g	North Wall	30.6	21.2	0.8	111.0	214.5	5.8	2.9
	17	104g	North Wall	27.8	21.5	1.1	112.6	265.1	9.4	3.0
	18	104g	North Wall	27.5	22.4	0.8	112.9	267.3	6.0	3.2
	19	104g	North Wall	28.9	21.2	0.6	111.3	222.2	5.0	3.1
	20	104g	North Wall	25.3	18.9	0.8	118.5	266.7	5.2	2.5
	21	104g	North Wall	24.8	22.0	1.1	155.5	266.1	9.9	3.2
	22	104g	North Wall	27.9	21.9	0.9	110.7	265.1	5.5	3.1
	23	104g	North Wall	28.5	5.1	0.8	117.7	218.5	5.7	3.3
	24	104g	North Wall	30.2	22.8	0.8	111.3	214.7	6.1	3.1
	25	104g	North Wall	29.2	6.6	0.7	113.8	258.0	6.2	3.4
	26	104g	North Wall	33.3	21.7	0.7	110.7	231.0	6.1	3.2
	27	104g	North Wall	28.2	21.4	0.7	112.6	196.4	6.0	3.2
	28	104g	North Wall	24.6	19.4	0.8	155.8	272.8	5.3	2.5
	29	104g	North Wall	33.7	22.3	0.8	108.5	200.3	5.6	3.2
	30	104g	North Wall	34.1	21.0	0.8	61.1	220.9	5.6	3.0
	31	104g	North Wall	30.0	21.4	0.8	110.7	249.1	5.7	3.0
	32	104g	North Wall	26.9	24.3	0.9	145.4	249.8	5.7	3.2
	33	104g	North Wall	31.1	22.8	0.8	111.2	232.6	6.0	3.3
	34	104g	North Wall	29.0	21.0	0.6	126.2	222.0	5.6	3.0
	35	104g	North Wall	36.8	21.2	0.7	89.0	183.8	6.1	3.0
	36	104g	North Wall	24.0	20.9	1.1	161.9	276.7	9.4	2.9
	37	104g	North Wall	32.1	23.2	0.7	109.3	196.0	6.3	3.3
	38	104g	North Wall	28.1	22.4	0.7	110.3	264.9	5.9	3.2
	39	104g	North Wall	28.5	23.5	1.1	110.3	265.7	10.1	3.2
	40	104g	North Wall	26.9	20.8	0.7	132.5	259.1	5.5	3.0
	41	104g	North Wall	27.3	23.9	0.8	111.9	265.7	5.9	3.5
	42	104g	North Wall	27.8	24.9	1.1	111.1	264.1	11.1	3.5
	43	104g	North Wall	35.0	20.9	0.8	110.8	195.1	6.1	3.1
	44	104g	North Wall	27.4	22.5	0.9	114.7	269.2	5.8	3.1
	45	104g	North Wall	28.7	21.8	0.8	110.8	205.6	6.2	3.4
	46	104g	North Wall	28.4	20.5	0.8	111.3	254.0	6.2	3.1
	47	104g	North Wall	27.3	23.7	1.1	152.5	283.6	10.5	3.2
	48	104g	North Wall	34.9	21.5	0.9	61.9	199.9	6.2	3.2
	49	104g	North Wall	23.6	20.4	1.1	182.9	321.1	9.2	2.8
	50	104g	North Wall	33.2	24.2	1.1	111.2	214.3	11.2	3.3
	51	104g	North Wall	36.9	22.8	0.7	110.6	158.2	5.9	3.0
	52	104g	North Wall	29.8	6.4	0.7	92.2	235.3	6.2	3.1
	53	104g	North Wall	29.6	21.1	0.8	108.7	173.0	6.1	3.1
	54	104g	North Wall	29.8	21.5	0.7	112.6	219.2	5.7	3.1
	55	104g	North Wall	30.1	23.3	0.7	112.8	214.3	5.7	3.1
	56	104g	North Wall	27.6	21.7	0.7	111.3	255.5	6.1	3.3
	57	104g	North Wall	29.8	8.3	0.8	115.4	258.3	6.2	3.3
	58	104g	North Wall	26.8	23.1	0.9	114.9	267.2	5.6	3.3
	59	104g	North Wall	29.6	23.2	1.1	116.0	274.5	10.6	3.3

Table A-23. Test 9 North wall pressure-time values for sheep nos. 833 and 834 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	60	104g	North Wall	37.8	21.9	0.8	108.6	197.4	6.5	3.3
	61	104g	North Wall	29.1	4.5	0.8	114.4	252.0	6.5	3.3
	62	104g	North Wall	29.8	21.3	0.7	109.4	232.0	5.8	3.0
	63	104g	North Wall	36.1	22.0	0.7	61.3	195.9	5.7	3.2
	64	104g	North Wall	25.5	23.0	1.2	144.9	265.0	9.9	3.2
	65	104g	North Wall	36.6	20.7	0.8	108.4	172.9	6.2	3.2
	66	104g	North Wall	32.4	22.1	0.8	111.3	220.1	6.0	3.1
	67	104g	North Wall	31.3	23.3	1.1	133.5	253.9	10.6	3.3
	68	104g	North Wall	31.1	22.8	0.9	116.1	250.4	5.5	3.1
	69	104g	North Wall	29.6	21.4	0.8	112.6	233.0	5.5	3.1
	70	104g	North Wall	34.7	21.1	0.7	67.8	200.7	6.4	3.3
	71	104g	North Wall	32.0	21.3	0.8	112.4	212.1	6.1	3.4
	72	104g	North Wall	26.1	22.0	1.1	144.9	265.7	10.1	3.0
	73	104g	North Wall	32.5	22.0	0.9	113.5	219.8	5.5	3.2
	74	104g	North Wall	32.7	22.1	0.8	111.6	217.6	5.9	3.0
	75	104g	North Wall	27.0	21.4	0.7	109.4	259.2	5.9	3.1
	76	104g	North Wall	30.8	21.7	0.7	108.8	214.0	5.7	3.2
	77	104g	North Wall	25.9	21.0	0.8	132.7	266.3	5.0	2.7
	78	104g	North Wall	25.1	19.4	0.8	134.0	260.0	5.3	2.6
	79	104g	North Wall	27.0	22.2	0.6	133.6	237.3	5.7	3.1
	80	104g	North Wall	38.5	20.8	0.8	87.7	194.8	6.5	3.3
	81	104g	North Wall	4.7	1.6	1.2	136.5	320.3	2.5	0.8
	82	104g	North Wall	28.5	22.7	0.8	111.1	216.1	5.7	3.1
	83	104g	North Wall	29.9	22.2	0.8	111.3	215.9	6.2	3.4
	84	104g	North Wall	31.2	20.3	0.7	89.9	214.2	5.5	2.9
	85	104g	North Wall	25.9	23.5	1.1	144.9	266.0	10.5	3.2
	86	104g	North Wall	28.1	5.4	0.7	142.1	253.9	6.0	3.0
	87	104g	North Wall	29.7	21.0	0.7	110.3	216.1	5.7	2.9
	88	104g	North Wall	29.1	22.5	0.8	108.6	220.3	5.5	3.3
	89	104g	North Wall	30.0	22.7	1.1	112.2	237.8	10.4	3.2
	90	104g	North Wall	27.6	4.4	0.7	115.2	256.2	6.2	3.0
	91	104g	North Wall	29.0	24.7	1.1	111.0	263.8	11.1	3.3
	92	104g	North Wall	27.0	21.9	0.8	140.8	252.0	5.8	2.9
	93	104g	North Wall	30.0	20.5	0.8	110.3	225.2	5.5	2.9
	94	104g	North Wall	29.9	21.9	0.8	112.6	213.7	5.9	3.3
	95	104g	North Wall	25.2	20.8	0.8	137.1	264.7	5.5	3.0
	96	104g	North Wall	26.0	21.2	0.8	111.5	264.6	5.4	2.8
	97	104g	North Wall	34.0	21.5	0.8	108.4	200.1	5.8	3.0
	98	104g	North Wall	29.9	22.6	0.9	133.4	231.7	5.6	3.0
	99	104g	North Wall	26.3	24.8	1.1	136.9	267.6	11.1	3.5
	100	104g	North Wall							
Mean				29.6	20.5	0.8	116.7	236.3	6.6	3.1
SD				4.3	5.0	0.2	20.2	32.4	1.9	0.3

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-24. Test 9 South wall pressure-time values for sheep nos. 833 and 834

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/9/97	1	104g	South Wall	31.8	31.8	0.7	152.2	244.3	8.0	4.7
	2	104g	South Wall	27.4	27.4	0.7	180.4	290.4	7.3	4.1
	3	104g	South Wall	27.3	27.3	0.7	148.2	244.1	7.3	4.0
	4	104g	South Wall	28.6	28.6	0.7	178.5	243.9	7.8	4.5
	5	104g	South Wall	27.5	5.3	0.7	153.6	271.0	7.7	4.3
	6	104g	South Wall	27.1	27.1	0.7	138.7	299.5	7.5	4.3
	7	104g	South Wall	30.5	30.5	0.7	149.2	267.2	7.7	4.5
	8	104g	South Wall	28.8	28.8	0.8	158.3	260.4	8.0	4.7
	9	104g	South Wall	32.5	32.5	0.7	161.5	263.5	7.8	4.6
	10	104g	South Wall	30.6	29.5	0.8	137.9	243.3	8.2	4.8
	11	104g	South Wall	29.4	29.4	0.7	138.8	266.8	6.9	4.0
	12	104g	South Wall	32.9	32.3	1.6	178.2	281.3	14.7	4.9
	13	104g	South Wall	29.1	29.1	0.7	147.7	284.8	7.5	4.2
	14	104g	South Wall	26.6	26.6	0.7	149.3	298.8	6.9	3.9
	15	104g	South Wall	26.4	26.4	0.7	178.8	306.5	7.1	4.1
	16	104g	South Wall	27.4	27.4	0.7	163.9	302.2	7.0	4.1
	17	104g	South Wall	37.6	28.8	0.8	138.6	208.3	6.8	4.1
	18	104g	South Wall	31.4	28.3	0.8	158.3	207.8	8.3	4.4
	19	104g	South Wall	29.4	26.4	0.9	171.7	282.8	6.0	4.1
	20	104g	South Wall	27.0	26.2	0.6	142.2	206.7	5.5	3.8
	21	104g	South Wall	27.2	26.5	0.8	178.4	282.7	7.7	4.5
	22	104g	South Wall	29.5	27.4	0.9	180.1	231.2	7.2	4.5
	23	104g	South Wall	30.2	30.2	0.7	167.9	302.8	7.9	4.7
	24	104g	South Wall	33.8	26.9	0.8	123.4	208.2	7.4	4.2
	25	104g	South Wall	32.1	6.6	0.7	151.8	234.7	7.8	4.3
	26	104g	South Wall	28.4	28.1	1.6	178.7	329.2	13.1	4.3
	27	104g	South Wall	30.8	30.8	0.7	151.1	243.7	7.6	4.3
	28	104g	South Wall	27.1	24.7	0.7	162.0	231.3	5.0	3.8
	29	104g	South Wall	32.0	31.8	0.8	158.3	243.4	7.4	4.3
	30	104g	South Wall	31.0	31.0	0.7	148.6	232.5	7.4	4.1
	31	104g	South Wall	28.9	24.9	0.8	148.0	299.5	6.3	4.0
	32	104g	South Wall	37.1	32.0	0.8	145.8	231.0	8.1	4.9
	33	104g	South Wall	31.7	31.7	0.7	121.4	231.9	7.8	4.2
	34	104g	South Wall	38.5	28.9	0.9	138.5	205.8	6.6	4.1
	35	104g	South Wall	29.3	29.3	0.7	148.6	293.2	7.1	4.1
	36	104g	South Wall	28.8	28.8	0.6	158.2	245.2	7.1	4.1
	37	104g	South Wall	29.3	29.3	0.7	178.2	238.2	7.8	4.3
	38	104g	South Wall	27.6	27.6	0.7	174.0	289.6	7.8	4.5
	39	104g	South Wall	28.5	28.0	1.6	203.4	285.7	13.8	4.5
	40	104g	South Wall	35.1	28.2	0.8	138.5	238.2	7.1	4.0
	41	104g	South Wall	29.6	29.6	0.7	158.2	258.1	8.4	4.8
	42	104g	South Wall	29.0	29.0	0.7	179.3	260.2	8.5	5.0
	43	104g	South Wall	29.0	29.0	0.6	138.6	231.2	7.3	4.1
	44	104g	South Wall	30.6	30.6	0.7	128.0	264.6	7.7	4.3
	45	104g	South Wall	32.3	32.3	0.6	124.1	249.3	7.8	4.2
	46	104g	South Wall	29.7	29.7	0.7	123.9	267.0	7.6	4.3
	47	104g	South Wall	31.7	29.4	0.8	155.7	235.9	7.9	4.7
	48	104g	South Wall	29.9	29.9	0.7	124.0	236.0	7.4	4.2
	49	104g	South Wall	30.5	28.2	0.7	138.8	212.5	5.5	4.2
	50	104g	South Wall	31.0	29.8	0.8	178.2	231.1	7.7	5.1
	51	104g	South Wall	31.6	26.8	0.8	171.3	243.8	7.2	4.0
	52	104g	South Wall	32.5	5.9	0.8	152.2	235.7	6.8	4.3
	53	104g	South Wall	31.3	31.3	0.7	138.6	260.3	7.7	4.2
	54	104g	South Wall	29.5	29.5	0.7	152.2	249.0	7.6	4.2
	55	104g	South Wall	28.9	28.9	0.8	180.2	288.9	7.9	4.5
	56	104g	South Wall	31.1	31.1	0.7	148.6	244.8	7.6	4.2
	57	104g	South Wall	32.6	7.7	0.7	153.2	249.5	7.8	4.3
	58	104g	South Wall	35.2	29.7	0.8	158.2	246.5	7.3	4.5

Table A-24. Test 9 South wall pressure-time values for sheep nos. 833 and 834 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	59	104g	South Wall	31.9	31.9	0.7	150.9	263.6	8.0	4.6
	60	104g	South Wall	29.6	29.6	0.6	174.0	238.7	7.6	4.2
	61	104g	South Wall	28.7	28.7	0.7	161.4	264.7	7.9	4.5
	62	104g	South Wall	29.7	28.1	0.8	171.3	282.4	6.4	4.0
	63	104g	South Wall	28.4	28.4	0.8	158.2	289.7	7.0	4.4
	64	104g	South Wall	34.6	28.0	0.8	161.7	230.8	7.2	4.6
	65	104g	South Wall	27.9	27.9	0.7	174.1	244.2	7.6	4.2
	66	104g	South Wall	29.7	27.8	0.8	158.7	242.8	7.0	4.0
	67	104g	South Wall	31.8	31.8	0.7	158.1	284.6	8.0	4.4
	68	104g	South Wall	33.0	28.5	0.8	148.3	245.9	7.4	4.5
	69	104g	South Wall	30.3	28.8	0.8	158.3	260.1	6.7	4.2
	70	104g	South Wall	29.5	29.5	0.7	174.0	208.0	7.5	4.3
	71	104g	South Wall	33.3	33.3	0.6	114.4	231.8	7.8	4.4
	72	104g	South Wall	33.5	27.1	0.8	148.5	243.4	7.1	4.4
	73	104g	South Wall	30.8	28.2	0.9	171.3	260.0	7.0	4.2
	74	104g	South Wall	27.3	27.3	0.7	174.1	309.8	7.4	4.1
	75	104g	South Wall	31.4	31.4	0.7	123.9	244.2	7.5	4.3
	76	104g	South Wall	30.0	30.0	0.6	138.7	231.4	7.2	4.2
	77	104g	South Wall	30.2	26.2	0.7	147.8	243.7	6.8	4.0
	78	104g	South Wall	28.3	28.3	0.7	161.8	232.8	6.7	4.0
	79	104g	South Wall	32.7	32.7	0.6	120.5	261.4	7.5	4.2
	80	104g	South Wall	30.0	30.0	0.7	157.2	261.5	7.5	4.3
	81	104g	South Wall	4.7	1.2	0.8	299.1	462.4	1.7	1.1
	82	104g	South Wall	27.5	27.5	0.7	147.7	243.1	7.7	4.7
	83	104g	South Wall	32.9	32.9	0.6	139.9	237.2	7.8	4.3
	84	104g	South Wall	29.9	29.9	0.7	161.6	243.5	6.9	3.9
	85	104g	South Wall	29.1	27.4	0.8	147.3	231.0	8.1	4.7
	86	104g	South Wall	32.0	28.8	0.7	154.0	213.1	7.2	4.5
	87	104g	South Wall	31.3	31.3	0.7	147.8	259.9	7.3	4.0
	88	104g	South Wall	29.7	29.7	0.7	148.8	230.6	8.0	4.7
	89	104g	South Wall	30.2	27.8	0.8	163.6	259.9	7.0	4.5
	90	104g	South Wall	31.6	31.6	0.7	152.2	248.2	7.6	4.4
	91	104g	South Wall	28.9	28.9	0.7	157.8	242.9	8.2	5.0
	92	104g	South Wall	30.1	30.1	0.7	138.2	211.4	7.4	4.2
	93	104g	South Wall	31.6	29.1	0.7	123.8	228.4	5.3	4.1
	94	104g	South Wall	31.4	31.4	0.7	100.2	242.8	7.7	4.2
	95	104g	South Wall	28.5	28.5	0.7	147.6	243.2	7.2	4.2
	96	104g	South Wall	30.3	30.3	0.7	149.0	231.6	7.1	4.1
	97	104g	South Wall	28.2	28.2	0.7	170.7	231.6	7.5	4.1
	98	104g	South Wall	32.8	26.2	0.8	163.7	230.7	6.6	4.0
	99	104g	South Wall	31.9	31.9	0.7	148.0	207.6	8.2	5.1
	100	104g	South Wall							
Mean				30.2	27.9	0.7	155.1	253.6	7.5	4.3
SD				3.5	5.6	0.2	22.9	34.1	1.4	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-25. Test 9 East wall pressure-time values for sheep nos. 833 and 834

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/9/97	1	104g	East Wall	20.9	3.1	1.0	219.6	381.8	6.7	7.6
	2	104g	East Wall	18.8	3.5	1.3	246.3	438.9	7.9	6.6
	3	104g	East Wall	19.1	3.3	0.7	218.5	373.6	5.2	6.7
	4	104g	East Wall	21.6	3.2	2.1	286.6	438.4	18.2	6.9
	5	104g	East Wall	20.5	7.1	1.4	284.2	405.0	8.0	6.9
	6	104g	East Wall	18.2	2.8	1.6	289.2	399.2	8.5	6.7
	7	104g	East Wall	20.4	3.2	0.7	206.4	310.1	7.5	7.0
	8	104g	East Wall	20.7	3.4	2.8	304.1	428.7	18.1	7.3
	9	104g	East Wall	21.1	6.5	0.9	220.1	342.6	7.2	7.3
	10	104g	East Wall	21.4	3.3	0.8	220.8	318.2	6.5	7.0
	11	104g	East Wall	18.1	2.7	1.6	292.8	438.6	15.0	6.4
	12	104g	East Wall	21.4	3.7	0.9	219.2	368.8	7.3	8.0
	13	104g	East Wall	20.5	3.2	2.6	292.7	438.3	16.8	6.9
	14	104g	East Wall	19.4	2.9	2.7	292.5	487.3	17.8	6.3
	15	104g	East Wall	18.5	6.7	2.0	295.1	466.6	16.1	6.6
	16	104g	East Wall	20.6	3.1	1.6	287.7	403.5	14.8	6.2
	17	104g	East Wall	18.8	3.0	2.0	289.3	403.8	15.9	6.6
	18	104g	East Wall	28.8	10.8	0.8	177.1	318.0	6.8	6.9
	19	104g	East Wall	18.8	4.2	2.7	306.1	487.3	18.8	6.7
	20	104g	East Wall	17.2	3.6	2.0	293.7	398.6	15.4	5.8
	21	104g	East Wall	20.1	3.4	1.6	281.1	403.6	7.6	7.0
	22	104g	East Wall	17.7	3.8	2.8	331.0	500.0	20.4	7.3
	23	104g	East Wall	18.4	7.3	2.4	290.8	487.8	17.1	7.1
	24	104g	East Wall	18.5	3.1	2.2	306.2	438.3	15.4	6.4
	25	104g	East Wall	19.8	9.5	2.1	294.4	437.9	18.2	7.3
	26	104g	East Wall	19.5	3.2	0.7	231.0	356.5	6.9	7.0
	27	104g	East Wall	17.9	3.2	0.9	221.1	353.2	6.7	7.0
	28	104g	East Wall	16.8	3.2	1.5	293.0	403.8	13.8	5.9
	29	104g	East Wall	22.7	4.1	0.9	219.1	342.6	6.6	6.9
	30	104g	East Wall	18.7	3.3	2.2	292.6	486.9	17.5	6.8
	31	104g	East Wall	16.7	3.8	2.1	292.7	487.2	17.1	6.6
	32	104g	East Wall	19.1	3.6	0.8	248.9	342.3	7.0	7.1
	33	104g	East Wall	23.4	3.8	0.8	204.9	352.0	7.2	7.2
	34	104g	East Wall	17.4	3.4	1.4	292.6	403.3	8.4	6.7
	35	104g	East Wall	21.1	3.2	2.0	283.9	440.3	16.5	6.5
	36	104g	East Wall	20.1	3.6	0.7	245.8	341.6	5.1	6.6
	37	104g	East Wall	21.9	4.1	0.8	235.7	317.9	7.8	7.2
	38	104g	East Wall	18.9	2.8	1.2	245.6	403.0	10.0	7.1
	39	104g	East Wall	21.5	13.0	0.8	220.6	352.3	7.5	6.9
	40	104g	East Wall	17.8	3.0	1.4	292.2	403.2	8.2	6.6
	41	104g	East Wall	20.5	3.2	2.2	289.5	436.6	19.8	7.4
	42	104g	East Wall	23.1	3.7	0.8	203.9	309.2	7.6	7.4
	43	104g	East Wall	19.5	3.2	1.6	292.2	428.8	14.8	6.7
	44	104g	East Wall	18.5	7.1	0.7	223.3	377.0	6.5	7.0
	45	104g	East Wall	20.1	3.8	2.4	286.7	488.8	19.1	7.2
	46	104g	East Wall	18.2	3.3	1.6	296.4	403.4	8.9	7.1
	47	104g	East Wall	18.4	4.5	2.6	346.7	505.7	17.1	7.0
	48	104g	East Wall	21.4	4.7	1.5	228.8	395.7	8.9	6.8
	49	104g	East Wall	18.5	4.0	1.3	247.1	419.0	7.6	6.6
	50	104g	East Wall	19.9	3.9	0.9	220.6	353.0	7.9	7.5
	51	104g	East Wall	18.4	3.3	1.0	226.9	353.6	7.0	6.8
	52	104g	East Wall	20.5	8.9	2.6	291.5	439.9	17.3	6.8
	53	104g	East Wall	19.6	3.7	2.6	292.4	486.8	17.0	7.0
	54	104g	East Wall	20.4	3.2	2.3	295.1	488.5	16.8	6.8
	55	104g	East Wall	19.3	3.0	2.1	292.1	430.1	17.7	6.7
	56	104g	East Wall	20.5	3.2	2.8	288.9	476.3	17.1	6.7
	57	104g	East Wall	19.6	11.3	2.2	291.0	439.4	18.3	7.2

Table A-25. Test 9 East wall pressure-time values for sheep nos. 833 and 834 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	East Wall	20.7	4.3	1.0	282.5	395.2	6.2	7.2
	59	104g	East Wall	19.5	5.5	0.7	221.3	376.3	5.0	7.3
	60	104g	East Wall	19.8	3.4	0.8	242.3	354.6	7.5	7.0
	61	104g	East Wall	18.7	6.2	1.3	287.8	403.3	10.2	7.1
	62	104g	East Wall	18.4	2.8	1.6	296.3	403.4	14.4	6.2
	63	104g	East Wall	20.3	3.7	0.8	220.9	352.4	6.8	7.0
	64	104g	East Wall	18.1	3.6	1.7	291.9	403.1	15.9	6.9
	65	104g	East Wall	17.0	3.5	0.8	220.8	398.2	5.5	6.9
	66	104g	East Wall	17.7	3.6	0.9	288.8	341.5	6.9	6.7
	67	104g	East Wall	20.0	3.4	0.8	215.2	342.2	7.0	7.3
	68	104g	East Wall	20.0	3.6	0.8	228.0	354.4	6.8	6.9
	69	104g	East Wall	25.6	5.5	1.0	215.1	317.9	6.1	7.2
	70	104g	East Wall	22.7	3.7	2.6	285.0	428.2	17.0	6.9
	71	104g	East Wall	18.3	3.2	0.7	284.5	385.5	5.1	7.3
	72	104g	East Wall	21.6	3.4	0.8	217.2	342.1	7.3	6.7
	73	104g	East Wall	16.0	3.2	2.1	351.3	486.5	17.5	7.0
	74	104g	East Wall	21.4	11.1	1.5	224.8	372.7	8.6	6.8
	75	104g	East Wall	18.7	4.0	2.7	288.9	501.9	19.4	6.9
	76	104g	East Wall	17.1	3.4	2.1	326.1	438.4	16.9	6.9
	77	104g	East Wall	21.4	3.8	1.6	255.2	394.5	14.6	6.4
	78	104g	East Wall	17.5	3.0	1.5	227.0	432.3	14.2	6.3
	79	104g	East Wall	18.8	3.9	0.8	240.5	358.8	7.4	6.9
	80	104g	East Wall	22.6	9.9	0.9	210.1	308.6	6.6	7.0
	81	104g	East Wall	5.9	1.3	2.2	141.9	302.5	5.4	2.2
	82	104g	East Wall	20.1	4.1	0.8	218.8	341.9	5.2	6.8
	83	104g	East Wall	20.3	3.2	0.8	206.7	352.3	5.6	7.3
	84	104g	East Wall	20.2	3.3	1.5	224.9	394.2	14.4	6.5
	85	104g	East Wall	21.4	3.7	1.0	220.5	341.8	7.7	7.2
	86	104g	East Wall	16.8	7.5	1.2	292.9	432.9	9.5	6.8
	87	104g	East Wall	19.7	11.0	2.0	291.6	403.1	17.0	6.7
	88	104g	East Wall	19.1	3.3	2.7	284.3	485.7	19.6	7.1
	89	104g	East Wall	18.6	3.5	0.8	246.1	341.7	7.2	6.9
	90	104g	East Wall	17.5	6.2	1.3	282.6	443.1	8.5	6.9
	91	104g	East Wall	21.6	3.3	0.7	216.6	325.9	5.7	7.3
	92	104g	East Wall	19.6	3.4	0.7	222.0	342.1	4.8	6.7
	93	104g	East Wall	18.4	3.9	1.4	288.4	429.6	14.6	6.5
	94	104g	East Wall	20.5	3.4	2.1	281.8	394.9	17.4	7.2
	95	104g	East Wall	19.9	3.1	0.9	217.7	352.5	6.9	6.8
	96	104g	East Wall	20.6	3.3	1.5	287.9	372.3	8.1	6.7
	97	104g	East Wall	18.8	3.5	2.0	302.3	401.1	16.5	6.9
	98	104g	East Wall	17.0	3.4	2.1	340.2	437.6	17.3	6.9
	99	104g	East Wall	20.6	3.4	0.8	206.4	357.7	4.5	7.5
	100	104g	East Wall							
Mean				19.6	4.3	1.5	261.4	398.8	11.3	6.8
SD				2.4	2.2	0.7	40.6	53.5	5.1	0.6

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-26. Test 10 North wall pressure-time values for sheep nos. 835 and 836

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/11/97	1	104g	North Wall	27.7	18.4	609.8	668.1	668.1	8271.9	23.3
	2	104g	North Wall	44.0	23.2	876.0	668.9	668.9	5039.3	26.1
	3	104g	North Wall	32.8	21.9	0.8	180.7	562.9	6.2	14.6
	4	104g	North Wall	27.0	22.1	1.1	232.0	667.9	9.8	3.9
	5	104g	North Wall	26.4	4.2	0.8	114.3	195.5	6.1	3.3
	6	104g	North Wall	25.8	21.5	0.9	138.5	218.3	5.6	3.0
	7	104g	North Wall	24.1	22.7	1.1	138.4	233.9	10.0	3.1
	8	104g	North Wall	30.2	20.8	0.8	663.6	663.6	5.9	5.1
	9	104g	North Wall	37.0	22.7	0.8	109.1	163.8	7.2	3.6
	10	104g	North Wall	33.3	21.9	0.9	141.5	236.2	6.3	3.3
	11	104g	North Wall							
	12	104g	North Wall	31.0	19.3	0.6	321.6	539.1	3.9	11.9
	13	104g	North Wall	29.6	22.5	0.8	109.6	192.1	6.4	3.3
	14	104g	North Wall	31.9	23.3	0.7	109.4	183.6	6.8	3.1
	15	104g	North Wall	26.9	21.4	0.8	111.3	191.6	5.3	3.0
	16	104g	North Wall	29.6	22.6	0.6	109.8	192.3	5.3	2.9
	17	104g	North Wall	32.3	21.5	0.7	109.1	180.5	6.4	3.2
	18	104g	North Wall	35.2	20.8	0.6	74.8	140.2	5.7	2.9
	19	104g	North Wall	34.9	20.9	0.7	89.1	195.9	6.2	3.1
	20	104g	North Wall	30.9	21.2	0.7	111.1	190.8	6.1	3.1
	21	104g	North Wall	27.8	23.6	0.8	119.3	190.8	6.5	3.6
	22	104g	North Wall	24.6	22.2	0.9	111.2	233.9	4.7	2.9
	23	104g	North Wall	32.6	22.0	0.8	109.2	189.7	6.5	3.3
	24	104g	North Wall	28.6	22.6	0.7	111.6	215.8	6.3	3.2
	25	104g	North Wall	32.6	21.4	0.7	111.0	176.7	6.3	3.2
	26	104g	North Wall	27.3	21.4	0.7	111.7	233.6	5.9	3.2
	27	104g	North Wall	30.7	21.9	0.7	111.0	190.7	6.6	3.3
	28	104g	North Wall	29.6	22.3	0.7	668.3	668.3	6.2	9.4
	29	104g	North Wall	30.5	23.3	0.8	111.4	257.9	6.2	3.2
	30	104g	North Wall	25.4	19.6	1.1	141.2	274.9	9.7	3.0
	31	104g	North Wall	29.5	21.1	0.7	668.3	668.3	6.3	7.0
	32	104g	North Wall	23.4	19.0	0.9	138.2	194.6	5.3	2.3
	33	104g	North Wall	31.7	19.9	0.8	663.6	663.6	5.9	11.5
	34	104g	North Wall	34.4	21.2	0.8	97.1	487.5	5.8	4.7
	35	104g	North Wall	28.9	20.4	0.8	109.5	183.9	5.8	3.0
	36	104g	North Wall	34.9	21.3	0.9	110.9	215.9	6.1	3.2
	37	104g	North Wall	32.7	21.2	0.8	101.4	190.6	6.4	3.2
	38	104g	North Wall	25.3	22.8	1.1	138.1	193.8	10.1	3.0
	39	104g	North Wall	32.2	21.1	0.7	109.3	183.4	6.3	3.2
	40	104g	North Wall							
	41	104g	North Wall	27.5	22.9	0.7	110.8	190.6	6.0	3.3
	42	104g	North Wall	35.5	22.1	0.7	88.1	192.1	6.5	3.3
	43	104g	North Wall	34.1	21.7	0.7	89.0	192.0	6.2	3.2
	44	104g	North Wall	32.3	27.4	0.9	668.7	668.7	6.9	10.6
	45	104g	North Wall	28.9	21.6	0.8	667.5	667.5	6.2	10.8
	46	104g	North Wall	30.3	20.1	868.5	668.2	668.2	5419.7	23.7
	47	104g	North Wall	34.6	23.0	0.8	111.3	257.5	7.0	3.5
	48	104g	North Wall	36.7	22.2	0.8	83.5	168.9	5.7	2.5
	49	104g	North Wall	27.1	22.4	835.3	562.9	668.9	2842.9	15.5
	50	104g	North Wall	38.2	22.0	856.1	668.3	668.3	4407.0	17.3
	51	104g	North Wall	41.0	21.2	861.6	351.6	668.7	2598.4	17.1
	52	104g	North Wall	35.8	19.9	35.8	428.5	468.1	213.0	15.5
	53	104g	North Wall	32.6	22.4	0.7	347.0	663.8	6.4	3.8
	54	104g	North Wall	34.1	21.7	0.7	78.2	173.6	6.3	3.0
	55	104g	North Wall	38.7	21.8	0.7	63.7	157.8	5.7	3.1

Table A-26. Test 10 North wall pressure-time values for sheep nos. 835 and 836 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	56	104g	North Wall	29.9	20.4	0.7	110.9	190.6	5.4	3.0
	57	104g	North Wall	21.2	19.8	0.7	126.5	191.2	6.1	3.1
	58	104g	North Wall	3.4	0.8	0.9	161.8	316.9	1.3	0.7
	59	104g	North Wall	30.0	23.5	0.8	108.9	191.6	6.0	3.2
	60	104g	North Wall	24.2	23.8	0.9	120.2	234.0	6.3	3.2
	61	104g	North Wall	32.6	22.8	0.8	111.1	257.2	6.7	3.5
	62	104g	North Wall	34.0	21.6	0.8	665.6	668.9	5.7	6.0
	63	104g	North Wall	24.5	23.6	1.1	260.2	668.4	10.0	3.4
	64	104g	North Wall	30.0	22.9	0.8	306.1	668.4	5.6	4.5
	65	104g	North Wall	27.9	21.9	0.8	248.8	668.4	5.8	4.0
	67	104g	North Wall	27.6	21.0	0.8	668.9	668.9	6.1	7.4
	68	104g	North Wall	35.5	20.7	0.9	180.0	668.3	5.9	3.5
	68	104g	North Wall	35.5	20.7	0.9	180.0	668.3	5.9	3.5
	70	104g	North Wall	29.0	23.5	1.1	111.2	232.8	10.6	3.3
	71	104g	North Wall	25.8	22.8	1.1	119.5	232.6	10.3	3.4
	72	104g	North Wall	27.8	7.7	0.8	123.1	219.2	6.0	3.1
	73	104g	North Wall	27.1	22.7	1.0	137.4	497.5	9.4	1.4
	73	104g	North Wall							
	75	104g	North Wall	28.9	1.9	0.5	412.3	799.9	4.4	0.4
	76	104g	North Wall	27.9	24.0	0.7	90.7	794.8	5.5	2.7
	77	104g	North Wall	29.8	23.6	0.8	110.5	182.7	6.6	3.4
	79	104g	North Wall	26.1	23.8	0.8	137.7	159.5	6.0	3.3
	80	104g	North Wall	37.1	21.4	0.9	87.9	179.9	6.1	2.9
	81	104g	North Wall	27.2	23.0	0.7	171.8	622.7	6.1	3.3
	82	104g	North Wall	36.7	20.9	0.7	77.4	579.0	6.1	3.5
	83	104g	North Wall	28.4	21.9	0.7	109.0	195.5	6.0	3.2
	84	104g	North Wall	30.0	22.1	0.7	110.5	214.3	6.1	3.1
	85	104g	North Wall	24.9	23.4	1.1	137.5	217.6	10.3	3.3
	86	104g	North Wall	26.3	20.7	0.8	137.6	233.3	5.6	2.8
	87	104g	North Wall	26.8	18.2	0.6	115.7	340.9	4.4	2.4
	88	104g	North Wall	25.7	21.7	0.8	668.9	668.9	4.9	10.7
	89	104g	North Wall	34.9	22.1	0.6	149.7	663.9	6.3	3.5
	92	104g	North Wall	31.1	23.0	0.8	666.2	666.2	4.9	7.2
	93	104g	North Wall	36.0	21.5	0.7	138.7	668.9	6.2	4.3
	94	104g	North Wall							
	95	104g	North Wall							
	96	104g	North Wall	9.9	2.8	2.4	79.3	235.9	7.7	2.8
	97	104g	North Wall	34.0	20.9	0.7	108.6	189.6	5.6	4.8
	98	104g	North Wall	28.2	21.4	0.8	109.9	190.9	6.3	3.2
	99	104g	North Wall	29.4	22.4	0.8	136.4	380.8	5.8	4.5
	100	104g	North Wall							
Mean				30.1	20.9	49.5	223.1	372.3	236.5	5.1
SD				5.6	4.5	198.8	202.1	219.5	977.6	4.6

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-27. Test 10 South wall pressure-time values for sheep nos. 835 and 836

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/11/97	1	104g	South Wall	23.2	19.8	1.5	215.9	296.7	12.6	4.5
	2	104g	South Wall	30.8	30.8	0.7	122.2	235.3	7.8	4.2
	3	104g	South Wall	33.6	29.5	0.8	137.1	235.8	7.5	4.2
	4	104g	South Wall	28.4	28.4	0.7	110.3	235.8	7.4	4.3
	5	104g	South Wall	29.5	29.5	0.7	121.2	239.0	8.1	4.7
	6	104g	South Wall	30.9	29.9	0.8	138.4	233.9	6.8	4.3
	7	104g	South Wall	34.7	25.8	0.9	110.2	234.5	7.3	4.4
	8	104g	South Wall	28.4	27.5	0.7	138.7	235.8	4.8	4.0
	9	104g	South Wall	33.9	33.9	0.7	120.7	175.5	8.2	4.8
	10	104g	South Wall	31.7	27.5	0.9	126.8	224.8	6.9	4.2
	11	104g	South Wall	27.8	27.8	0.7	138.4	234.5	7.1	3.9
	12	104g	South Wall	35.4	27.5	0.9	123.7	233.8	6.7	4.1
	13	104g	South Wall	31.9	31.9	0.7	139.0	235.5	7.6	4.2
	14	104g	South Wall	29.9	29.9	0.7	138.3	235.7	7.9	4.5
	15	104g	South Wall	29.7	28.7	0.9	137.3	235.8	6.0	4.0
	16	104g	South Wall	25.6	25.6	0.7	141.4	235.8	7.3	4.3
	17	104g	South Wall	31.3	31.3	0.7	137.2	196.3	7.4	4.3
	18	104g	South Wall	28.2	28.2	0.7	138.3	235.9	7.0	4.0
	19	104g	South Wall	31.4	31.4	0.7	122.1	240.9	7.4	4.1
	20	104g	South Wall	29.1	29.1	0.7	138.0	235.6	7.4	4.1
	21	104g	South Wall	33.3	33.3	0.7	109.9	234.0	8.3	4.8
	22	104g	South Wall	39.3	26.5	0.8	93.5	189.8	7.4	4.0
	23	104g	South Wall	30.8	30.8	0.7	139.0	235.7	7.7	4.3
	24	104g	South Wall	28.5	28.4	0.8	139.0	235.5	7.7	4.3
	25	104g	South Wall	31.4	31.4	0.7	122.1	235.6	7.5	4.2
	26	104g	South Wall	27.8	27.8	0.6	139.1	235.7	7.6	4.1
	27	104g	South Wall	30.7	30.7	0.7	138.9	234.0	7.8	4.2
	28	104g	South Wall	31.6	31.6	0.7	138.9	240.0	7.9	4.4
	29	104g	South Wall	28.3	27.1	0.8	137.6	235.6	7.4	4.2
	30	104g	South Wall	28.1	28.1	0.7	141.9	238.6	7.0	4.2
	31	104g	South Wall	41.9	28.9	0.8	88.1	228.9	6.4	4.0
	32	104g	South Wall	24.5	24.5	0.6	138.8	236.0	6.4	3.8
	33	104g	South Wall	26.8	26.8	0.6	141.2	234.3	6.5	3.8
	34	104g	South Wall	26.6	26.6	0.7	139.8	235.6	7.0	4.1
	35	104g	South Wall	29.4	29.4	0.7	124.6	236.4	7.0	4.0
	36	104g	South Wall	28.6	28.6	0.7	138.1	235.5	7.5	4.2
	37	104g	South Wall	30.2	30.2	0.7	118.1	234.1	7.3	4.1
	38	104g	South Wall	46.3	28.8	0.8	68.8	142.4	7.7	4.5
	39	104g	South Wall	30.2	30.2	0.7	122.4	235.4	7.4	4.2
	40	104g	South Wall							
	41	104g	South Wall	29.1	28.9	1.6	155.4	234.0	13.9	4.5
	42	104g	South Wall	29.9	29.9	0.7	138.8	235.4	7.6	4.3
	43	104g	South Wall	30.6	30.6	0.7	138.1	231.7	7.3	4.2
	44	104g	South Wall	33.7	33.7	0.7	120.3	221.2	9.2	5.2
	45	104g	South Wall	29.2	29.2	0.7	137.0	229.9	7.3	4.2
	46	104g	South Wall	28.1	26.9	0.9	139.7	235.2	5.4	4.2
	47	104g	South Wall	30.7	30.7	0.7	121.7	235.2	8.3	4.4
	48	104g	South Wall	34.4	27.3	0.8	109.7	169.0	7.2	4.3
	49	104g	South Wall	29.6	29.4	0.9	138.7	235.1	7.3	4.7
	50	104g	South Wall	39.9	30.2	0.8	116.4	195.7	7.2	4.1
	51	104g	South Wall	31.3	31.3	0.7	102.8	235.7	7.4	4.4
	52	104g	South Wall	36.3	28.2	0.8	87.9	215.2	8.0	4.7
	53	104g	South Wall	31.1	31.1	0.7	117.6	231.5	7.7	4.3
	54	104g	South Wall	35.1	30.7	0.9	136.6	233.6	5.7	4.2
	55	104g	South Wall	28.0	28.0	0.7	138.2	236.7	7.3	4.3
	56	104g	South Wall	33.4	29.7	0.8	117.6	234.3	7.1	4.2
	57	104g	South Wall	26.1	26.0	0.8	138.7	235.3	6.5	4.2

Table A-27. Test 10 South wall pressure-time values for sheep nos. 835 and 836 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	58	104g	South Wall	4.7	1.6	1.4	565.9	684.6	4.1	1.4
	59	104g	South Wall	32.8	29.2	0.8	136.6	235.1	7.2	4.5
	60	104g	South Wall	31.0	26.8	0.8	136.4	233.5	7.3	4.4
	61	104g	South Wall	29.1	29.1	0.7	122.0	234.7	7.8	4.3
	62	104g	South Wall	35.0	26.7	0.8	121.8	199.0	6.5	4.0
	63	104g	South Wall	35.3	28.8	0.8	119.5	208.3	7.8	4.5
	64	104g	South Wall	36.6	30.0	0.8	117.5	233.5	7.1	4.5
	65	104g	South Wall	32.7	27.5	0.8	136.7	234.9	6.8	4.2
	66	104g	South Wall	31.4	31.4	0.7	124.2	235.0	7.7	4.4
	67	104g	South Wall	30.2	30.2	0.7	136.8	228.5	7.3	4.2
	68	104g	South Wall	31.2	29.5	0.9	136.7	235.2	6.2	3.9
	68	104g	South Wall	31.2	29.5	0.9	136.7	235.2	6.2	3.9
	70	104g	South Wall	32.1	30.8	0.8	117.5	245.2	8.0	4.6
	71	104g	South Wall	29.2	29.2	0.7	141.2	234.6	7.9	4.5
	72	104g	South Wall	29.6	6.9	0.7	142.5	233.5	7.3	4.5
	73	104g	South Wall	33.4	33.4	0.7	117.3	236.1	8.4	5.1
	74	104g	South Wall							
	75	104g	South Wall	32.8	32.8	0.8	44.8	799.8	7.7	4.4
	76	104g	South Wall	38.0	28.0	0.8	89.7	792.4	8.6	4.9
	77	104g	South Wall	30.0	30.0	0.8	119.1	244.2	7.4	4.6
	78	104g	South Wall	29.5	29.5	0.7	137.7	233.4	7.2	4.0
	79	104g	South Wall	28.8	28.8	0.7	138.4	234.6	8.1	4.8
	80	104g	South Wall	30.8	28.4	0.9	153.5	234.8	6.1	4.1
	81	104g	South Wall	30.0	30.0	0.7	138.2	202.3	8.1	4.6
	82	104g	South Wall	28.9	27.8	0.7	138.5	234.8	6.2	4.1
	83	104g	South Wall	32.1	30.3	0.9	138.3	234.6	7.2	4.2
	84	104g	South Wall	29.2	28.8	0.8	138.5	234.8	7.3	4.3
	85	104g	South Wall	32.5	32.5	0.7	139.8	214.4	8.0	4.6
	86	104g	South Wall	26.2	26.2	0.7	137.3	234.9	7.0	4.1
	87	104g	South Wall	30.6	30.6	0.7	143.4	239.6	7.4	4.1
	88	104g	South Wall	33.4	29.0	0.8	136.3	201.6	7.1	4.4
	89	104g	South Wall	29.4	29.4	0.7	138.3	234.7	7.7	4.2
	90	104g	South Wall	28.0	28.0	0.6	137.4	235.1	7.0	3.9
	91	104g	South Wall	27.7	27.6	0.9	137.6	234.8	6.8	4.1
	92	104g	South Wall	36.7	28.2	0.8	109.6	201.1	6.9	4.3
	93	104g	South Wall	30.5	30.5	0.7	136.5	234.7	7.3	4.1
	94	104g	South Wall	30.0	30.0	0.7	138.3	236.3	7.4	4.4
	95	104g	South Wall	32.7	30.5	0.8	117.3	233.2	7.7	4.3
	96	104g	South Wall							
	97	104g	South Wall	30.5	28.5	0.9	136.7	255.7	6.5	4.2
	98	104g	South Wall	29.3	29.3	0.7	138.3	214.6	7.6	4.4
	99	104g	South Wall	34.6	29.0	0.8	136.3	232.5	7.0	4.3
	100	104g	South Wall							
Mean				30.9	28.6	0.8	134.0	246.3	7.4	4.3
SD				4.5	4.1	0.2	48.5	94.7	1.1	0.4

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration
Psm = smoothed peak pressure

Table A-28. Test 10 East wall pressure-time values for sheep nos. 835 and 836

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
9/11/97	1	104g	East Wall	20.3	3.5	1.3	244.5	334.0	7.0	6.9
	2	104g	East Wall	17.1	3.6	2.8	273.3	431.4	20.1	7.2
	3	104g	East Wall	18.7	4.2	2.6	271.1	424.1	19.2	6.9
	4	104g	East Wall	18.5	3.1	1.1	228.6	341.8	6.2	6.9
	5	104g	East Wall	20.6	6.5	0.8	229.0	317.7	6.3	7.4
	6	104g	East Wall	19.3	3.9	2.5	271.0	380.8	18.8	6.7
	7	104g	East Wall	22.4	9.8	0.9	207.0	316.2	6.3	6.8
	8	104g	East Wall	20.9	3.3	1.9	235.9	361.4	15.4	6.6
	9	104g	East Wall	17.7	3.4	1.4	270.8	371.6	11.8	7.7
	10	104g	East Wall	18.3	5.4	2.5	246.2	432.2	20.0	7.1
	11	104g	East Wall	18.6	3.1	1.6	246.5	385.0	15.3	6.4
	12	104g	East Wall	15.2	3.2	2.2	310.1	476.2	18.5	7.2
	13	104g	East Wall	20.3	3.7	1.1	211.7	341.5	7.6	7.0
	14	104g	East Wall	20.7	3.4	1.0	210.8	300.2	6.7	7.1
	15	104g	East Wall	19.0	3.5	2.7	273.3	382.5	16.1	6.7
	16	104g	East Wall	20.7	3.6	2.4	237.5	382.7	18.4	6.6
	17	104g	East Wall	19.1	2.9	2.3	237.4	384.7	18.8	6.9
	18	104g	East Wall	20.6	3.9	1.1	227.1	341.8	6.4	6.3
	19	104g	East Wall	21.8	8.8	2.8	240.4	369.0	19.5	6.9
	20	104g	East Wall	17.8	2.8	2.5	290.8	363.1	19.7	7.1
	21	104g	East Wall	25.8	3.9	1.4	204.2	310.4	9.7	7.7
	22	104g	East Wall	19.9	3.1	2.4	276.1	382.5	18.1	6.4
	23	104g	East Wall	20.0	3.6	0.9	214.5	341.5	7.1	7.1
	24	104g	East Wall	22.0	5.0	0.7	150.2	279.0	6.7	7.2
	25	104g	East Wall	19.0	2.9	2.3	278.1	371.2	18.6	6.8
	26	104g	East Wall	18.3	3.6	1.1	213.1	343.2	6.8	6.8
	27	104g	East Wall	19.0	3.4	2.3	278.2	382.4	19.4	7.1
	28	104g	East Wall	20.9	3.8	1.2	227.4	316.7	8.0	7.1
	29	104g	East Wall	18.8	3.1	2.3	243.9	352.4	18.6	6.7
	30	104g	East Wall	20.4	7.9	0.9	205.2	344.5	6.6	6.8
	31	104g	East Wall	18.1	2.8	2.4	237.3	382.3	17.8	6.8
	32	104g	East Wall	19.1	3.1	2.1	237.6	369.2	15.5	5.9
	33	104g	East Wall	17.7	3.7	2.2	270.7	382.8	16.4	6.2
	34	104g	East Wall	18.6	3.0	1.5	237.3	364.6	8.3	6.7
	35	104g	East Wall	19.2	3.1	0.9	207.0	341.7	5.6	6.6
	36	104g	East Wall	20.6	8.2	2.0	236.0	384.4	17.5	6.9
	37	104g	East Wall	17.4	3.0	0.9	211.6	341.4	6.9	6.8
	38	104g	East Wall	18.7	3.4	2.1	272.6	382.0	18.0	6.9
	39	104g	East Wall	18.2	3.4	2.1	277.8	382.1	17.5	6.7
	41	104g	East Wall	21.7	3.4	0.9	207.0	316.0	7.0	7.4
	42	104g	East Wall	18.6	4.1	2.3	270.4	382.0	18.9	7.1
	43	104g	East Wall	18.3	2.9	2.0	277.8	342.5	17.3	6.9
	44	104g	East Wall	20.2	3.1	1.4	242.6	351.0	11.0	8.9
	45	104g	East Wall	20.3	3.4	2.0	237.0	363.7	17.3	6.9
	46	104g	East Wall	20.4	3.1	2.5	270.3	341.1	18.9	6.8
	47	104g	East Wall	22.7	3.8	0.9	206.3	299.2	7.5	7.5
	48	104g	East Wall	17.0	4.0	2.7	168.3	799.3	19.1	6.8
	49	104g	East Wall	19.1	3.7	0.8	212.4	295.0	7.2	7.3
	50	104g	East Wall	17.4	2.7	2.1	243.6	381.8	17.6	7.0
	51	104g	East Wall	17.6	3.2	3.0	278.2	430.5	16.9	7.0
	52	104g	East Wall	21.6	3.3	0.8	205.7	299.2	7.0	6.9
	53	104g	East Wall	22.9	4.0	0.7	203.1	278.7	7.4	7.0
	54	104g	East Wall	17.6	3.3	2.0	277.4	364.4	17.5	6.9
	55	104g	East Wall	20.9	3.7	1.4	210.9	340.7	7.8	6.9
	56	104g	East Wall	17.6	2.8	0.9	214.1	342.1	6.6	6.7

Table A-28. Test 10 East wall pressure-time values for sheep nos. 835 and 836 (continued)

Date	Shot Number	Charge Weight,g	Gage Location	Pmax, kPa	Pi, kPa	Ta, ms	Tb, ms	Td, ms	A-Impulse, kPa*ms	Psm, kPa
	57	104g	East Wall	17.1	3.6	1.2	227.8	341.8	9.7	6.6
	58	104g	East Wall	5.5	1.6	2.5	800.0	728.1	6.2	2.6
	59	104g	East Wall	19.4	3.2	0.9	227.6	319.7	7.3	7.0
	60	104g	East Wall	17.0	4.2	1.2	246.2	333.6	11.0	6.8
	61	104g	East Wall	17.7	3.6	0.9	206.9	331.7	7.2	7.3
	62	104g	East Wall	19.5	4.0	0.8	215.8	341.3	6.4	6.7
	63	104g	East Wall	19.4	12.3	2.8	269.7	394.1	19.0	7.4
	64	104g	East Wall	18.9	3.6	1.1	227.5	340.4	7.7	7.1
	65	104g	East Wall	17.8	2.9	0.8	227.6	340.8	6.8	6.7
	66	104g	East Wall	19.0	3.1	1.1	243.0	353.5	10.6	7.0
	67	104g	East Wall	19.2	3.3	0.8	213.8	331.2	7.3	6.7
	68	104g	East Wall	23.0	8.0	0.8	204.6	293.9	6.9	6.6
	69	104g	East Wall							
	70	104g	East Wall	20.5	4.3	0.7	217.7	316.0	5.8	7.3
	71	104g	East Wall	20.7	3.4	2.2	269.3	365.1	19.6	7.5
	72	104g	East Wall	21.7	10.8	1.2	208.8	317.3	7.9	7.1
	73	104g	East Wall	18.5	3.4	1.4	242.7	332.0	11.5	7.9
	74	104g	East Wall	6.3	1.9	2.0	107.7	224.7	4.4	1.9
	75	104g	East Wall	22.2	11.2	0.7	796.8	0.0	6.6	6.9
	76	104g	East Wall	21.4	3.6	1.2	787.0	799.7	11.1	7.5
	77	104g	East Wall	18.7	2.9	1.4	243.0	340.5	11.9	7.6
	78	104g	East Wall	18.1	3.0	2.1	277.1	381.2	17.7	6.9
	79	104g	East Wall	21.9	3.6	1.2	211.8	315.5	11.4	7.4
	80	104g	East Wall	17.6	2.9	0.8	211.9	316.3	6.4	6.8
	81	104g	East Wall	22.9	12.0	1.1	202.5	298.5	8.1	7.4
	82	104g	East Wall	18.4	3.0	0.7	206.8	310.8	6.7	7.1
	83	104g	East Wall	18.6	3.3	0.7	204.8	311.2	7.2	7.1
	84	104g	East Wall	18.4	3.0	0.7	227.5	310.7	7.1	7.1
	85	104g	East Wall	17.4	2.8	2.3	292.3	380.8	19.8	7.2
	86	104g	East Wall	19.2	10.4	2.2	277.0	365.3	17.6	6.5
	87	104g	East Wall	16.7	5.3	1.2	239.3	125.8	7.4	7.0
	88	104g	East Wall	18.8	10.5	1.0	226.8	315.8	6.3	6.8
	89	104g	East Wall	18.2	3.0	0.7	213.5	331.5	4.4	7.3
	90	104g	East Wall	18.1	3.1	2.4	276.9	363.5	17.5	6.7
	91	104g	East Wall	19.0	10.6	0.7	203.1	340.1	6.6	7.0
	92	104g	East Wall	19.9	3.1	0.7	194.2	247.5	6.0	6.9
	93	104g	East Wall	23.1	8.0	0.9	199.8	310.5	6.6	7.1
	94	104g	East Wall	18.8	3.5	2.1	277.9	365.3	18.6	7.4
	95	104g	East Wall	20.5	3.5	1.0	203.3	317.0	7.4	6.9
	96	104g	East Wall	15.4	2.9	2.6	87.5	222.6	13.8	5.0
	97	104g	East Wall	17.9	3.0	0.8	227.3	310.7	7.1	7.0
	98	104g	East Wall	19.9	3.1	0.9	211.8	315.2	8.5	7.0
	99	104g	East Wall	18.3	3.3	0.8	245.5	315.8	7.2	7.0
	100	104g	East Wall							
Mean				19.1	4.3	1.5	250.2	351.9	11.7	6.9
SD				2.6	2.4	0.7	104.0	95.7	5.4	0.8

Pmax = peak pressure
Pi = incident pressure
Ta = A duration
Tb = B duration
Td = total duration

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